H. Greene
1982-1984

Catalogue #1135-1483

Journal

1982 Costa Rica
Calif: Mendocino, Inyo, San Bernadino,
Riverside, Kern Cos.

1983 Costa Rica
Calif: Kern Co.

1984 Calif: Mendocino Co.
Costa Rica
Oklahoma: Cimarron Co.
New Mexico: San Miguel, Cibola Cos.
Calif: Orange, San Bernadino Cos.

Greene, H.
1982

23 April (continued) Near Pisgah Crater, 7.3 mi W. of RR Tracks on National Trails Hwy, San Bernardino Co., California

1135 Phrynosoma platyrhinos DOR 1917 hr

24 April Pisgah Crater, San Bernardino Co., California

1136 Gambelia wislizeni 0904 hr "black"

1137 Gambelia wislizeni ≈ 1100 hr

1138 Phrynosoma platyrhinos

1139 Crotalus mitchelli 0930 hr

1.0 mi S. Cal City Blvd on Rd to Hwy 58, Kern Co., California

1140 Crotalus scutulatus DOR 2010 hr, 11.5 g

7.6 mi S. Cal City Blvd on Rd to Hwy 58, Kern Co., California

1141 Crotalus scutulatus DOR 2034 hr, 22 g

7.8 mi S. Cal City Blvd on Rd to Hwy 58, Kern Co., California

1142 Crotalus scutulatus DOR ≈ 2037 hr, 16.5 g

25 April 5 mi N. California City, Kern Co., California

1143 Phrynosoma platyrhinos AOR ≈ 0900 hr

7 May 8.6 mi E Hwy 395 on Hwy 190, Inyo Co., California

1144 Crotalus cerastes AOR 2057 hr 332 + 30 32 g (kept by D. Cundall)

23.2 mi E Hwy 395 on Hwy 190, Inyo Co., California

1145 Crotalus cerastes AOR 2124 hr

8 May Trona Road, 1 mi N of Hwy 395, San Bernardino Co., California

1146 Crotalus mitchelli AOR 1551 hr

Near Pisgah Crater, 1.6 mi W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1147 Crotalus cerastes AOR 2023 hr 251 + 15 mm 23 g (incl. prey)

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8 May 10.1 mi E Newberry Springs (I40) on National Trails Hwy, San Bernardino Co., California

1148 Coleonyx variegatus AOR 2126 hr

1.4 mi E Newberry Springs (I40) on National Trails Hwy, San Bernardino Co., California

1149 Hypsiglena torquata DOR 2145 hr

10 May 0.4 mi W. of RR tracks on National Trails Highway, near Pisgah Crater, San Bernardino Co., California

1150 Crotalus cerastes AOR 2015 hr 5/♀ (incl. prey) 390+38 mm

Near Pisgah Crater, 2.7 mi E of RR tracks on National Trails Hwy, San Bernardino Co., California

1151 Crotalus cerastes AOR 2027 hr

12 May 5 mi N California City, Kern Co., California

1152 Crotalus scutulatus active 1030 hr 842+61 mm 4/0♂

≈3 mi N California City, Kern Co., California

1153 Gambelia wislizeni ♀

1154 Lynx rufus scat

11 May Pisgah Crater, San Bernardino Co., California

1155-1158 Lynx rufus scats

12 May 37.2 mi W. Panamint Valley Rd on Hwy 190, Inyo Co., California

1159 Coleonyx variegatus AOR 2155 hr aberrant striped pattern

13 May 4.2 mi W. Darwin Rd on Hwy 190, Inyo Co., California

1160 Crotalus mitchelli AOR 0032 hr

6.2 mi NW Redrock-Randsburg Rd on Garlock Rd., Kern Co. California

1161 Crotalus cerastes DOR 0955

5.6 mi S. Redrock-Randsburg Rd on Hwy 14, Kern Co., California

1162 Masticophis flagellum AOR 1021 hr

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1982

15 May 4.9 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., California

1163 Crotalus viridis AOR 2040 hr 30g (incl prey) 298 + 24 mm

4.4 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., California

1164 Crotalus viridis AOR 2049 hr (kept by David Cundall)

2.0 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., Cal.

1165 Arizona elegans AOR 2116 hr 8g 263 + 38 mm

3.0 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., California

1166 Crotalus viridis AOR 2121 hr. 481 + 27 mm 75g (kept by D. Cundall)

1.2 mi E. Alameda Co. line on Coral Hollow Rd, San Joaquin Co., Cal.

1167 Crotalus viridis AOR 2146 hr 36g 371 + 32 mm

2.2 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., California

1168 Pituophis melanoleucus AOR 2159

2.5 mi E. Alameda Co. line on Coral Hollow Rd., San Joaquin Co., California

1169 Pituophis melanoleucus AOR 2213 415 + 60 mm 32g

28 May 5 mi N. California City, Kern Co., California

1170 Pituophis melanoleucus 370g 927 + 128

Pisgah Crater, San Bernardino Co., California

1171 Crotalus mitchelli active ≈ 1740 hr

1172 Crotalus cerastes 120g 507 + 27 mm

1173 Crotalus cerastes 53g 405 + 38 mm

Greene, H.
1982

11 April 7.3 mi. N. Novato (at Hwy 37) on Hwy 101, Marin Co., California

1125 Lampropeltis getulus DOR at 1310 hr

17 April 6.1 mi E. Flynn Creek Rd. on Orr Springs Rd., Mendocino Co., California

1126 Charina bottae Coll. J. H. Carothers 7.7g, 226+26mm

1127 Charina bottae Coll. R. L. Seib 56.5g, 413+58+? mm

23 April ≈28 mi W. Barstow on Hwy 58, San Bernardino Co., California

1128 Pituophis melanoleucus AOR/DOR 1613 hr, 17.5g
Near Pisgah Crater, 5.9 mi W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1129 Crotalus cerastes AOR 1919 hr, 84g
Near Pisgah Crater, 11.5 mi W of RR tracks on National Trails Hwy, San Bernardino Co., California

1130 Crotalus cerastes AOR 1934 hr, 55g
Near Pisgah Crater, ~~3.8 mi W. of~~ at RR tracks on National Trails Hwy, San Bernardino Co., California

1131 Crotalus cerastes AOR 2025 hr, 40g
Near Pisgah Crater, ~~5.0~~ 1.2 mi. W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1132 Crotalus cerastes AOR 2032 hr, 69g
Near Pisgah Crater, 2.0 mi W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1133 Crotalus cerastes 2036 hr AOR, 75g
Near Pisgah Crater, 0.6 mi W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1134 Crotalus cerastes AOR 2057 hr, 44g

Greene, H.

1982

28 May ~~Near Pisgah~~ ≈5 mi E of Newberry Springs on National Trails Hwy, San Bernardino Co., California

1174 Crotalus cerastes AOR 38g 337+31mm

4.2 mi W. Amboy on National Trails Hwy, San Bernardino Co., California

1175 Crotalus cerastes AOR 7g 206+14mm

San Bernardino Co., California

1176 Crotalus cerastes AOR 100g 509+33mm

Near Pisgah Crater, 2.5 mi W. of I 40 overpass on National Trails Hwy, San Bernardino Co., California

1178 Chionactis occipitalis AOR (orange interspaces) 7g 233+52mm

1177 Chionactis occipitalis AOR 7g 230+49mm

2.8 mi W of I 40 overpass on Natl. Trails Hwy, near Pisgah Crater

1179 Arizona elegans AOR 9.5g 309+46mm 2 Utu regurg. & saved

29 May Pisgah Crater, San Bernardino Co., California

1180 Crotalus mitchelli 0910 hr

1181 Crotaphytus bicinctores 36g

Near Pisgah Crater, 0.2 mi W. of RR tracks on National Trails Hwy, San Bernardino Co., California

1182 Crotalus cerastes AOR 2120 hr 67g 446+29 mm

0.9 mi W. Ludlow (I 40) on National Trails Hwy, San Bernardino Co., California

1183 Crotalus cerastes AOR 2147 hr 110g 523+57mm

6.6 mi W. Ludlow (I 40) on Natl. Trails Hwy, San Bernardino Co., California

1184 Crotalus cerastes AOR 2205 hr 57g 396+26mm

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29 May 6.3 mi. W. Ludlow (I 40) on Natl. Trails Hwy, San Bernardino Co., California

1185 Crotalus cerastes AOR 2227 hr 115g 478+30 mm

13.6 mi W. Ludlow (I 40) on Natl. Trails Hwy, San Bernardino Co.,

1186 Arizona elegans AOR 115g 695+98 mm

10.8 mi W. Ludlow (I 40) on Natl. Trails Hwy, San Bernardino Co., California

1187 Arizona elegans AOR 140g 720+79mm

1188 Crotalus cerastes AOR 12g 240+15 mm

1189 Crotalus cerastes AOR 46g 482+24 mm

1190 Crotalus cerastes AOR 26g 306+29mm

1191 Arizona elegans AOR 79g 612+98 mm

1192 Arizona elegans AOR 178g 775+117 mm

30 May 12 mi S. Jct. Panamint Valley Rd on Trona-Wildflower Rd., Inyo Co., California

1193 Phrynosoma platyrhinos AOR/DOR 1300 hr, pres 8000 hr 20g

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1982

30 May — Darwin Falls Canyon, ≈ 2 mi S. Hwy 190 on Darwin Rd., Inyo Co., California

1194 Crotaphytus vicinctores ≈ 1300 hr, pres. 1800 hr
9.5 mi E. Saline Valley Rd on Hwy 190, Inyo Co., California

1195 Chionactis occipitalis AOR 2147 hr 8.5 g 252 + 55 mm
6.8 mi W. Darwin Rd. (E. Jct.) on Hwy 190, Inyo Co, California

1196 Chionactis occipitalis AOR 5.5 g 218 + 47 mm
9.2 mi W. Darwin Rd (E. jct.) on Hwy 190, Inyo Co., California

1197 Chionactis occipitalis AOR 8 g 240 + 24 + ?
0.2 mi. E. Darwin Rd. (E. Jct.) on Hwy 190, Inyo Co., California

1198 Crotalus cerastes AOR 6.5 g 207 + 19 mm
2.6 mi. E. Saline Valley Rd. on Hwy 190, Inyo Co., California

1199 Crotalus cerastes AOR 64 g 380 + 38 mm

21 June — 22 mi W. Hwy 6 on Hwy 120, Mono Co., California

1200 Uta stansburiana
1.3 mi W. Saline Valley Rd on Hwy 190, Inyo Co., California

1201 Rhinocheilus lecontei DOR 2201 hr 50 g
0.8 mi E. Saline Valley Rd. on Hwy 190, Inyo Co., California

1202 Rhinocheilus lecontei AOR 2207 hr 78 g 580 + 96 mm
0.5 mi W. Darwin Rd on Hwy 190, Inyo Co., California

1203 Crotalus cerastes AOR 2235 hr 55 g 405 + 30 mm

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23 June 6.6 mi N. I40 on Kelbaker Rd., San Bernardino Co., California

1204 Masticophis flagellum 1155 hr 138 g 862 + 298 mm

6.0 mi ENE Randsburg-Mojave Rd on 20 Mule Team Parkway, Kern Co., California

1205 Crotalus scutulatus AOR 2126 hr 140 g 606 + 45 mm

10.4 mi ENE Randsburg-Mojave Rd on 20 Mule Team Parkway, Kern Co., California

1206 Crotalus scutulatus AOR 2141 hr 70 g 467 + 36 mm

7.4 mi ENE Randsburg-Mojave Rd on 20 Mule Team Parkway Kern Co., California

1207 Crotalus scutulatus AOR 2153 hr 60 g 425 + 32 mm 2 rodents hf, 1 ≈ 10 g

5.1 mi ENE Randsburg-Mojave Rd on 20 Mule Team Parkway, Kern Co., California

1208 Crotalus cerastes DOR 2201 hr

3.1 mi ENE Randsburg-Mojave Rd on 20 Mule Team Parkway, Kern Co., California

1209 Rhinocheilus lecontei AOR 2209 hr 110 g (+ prey) 643 + 104 mm 2 rodents hf, 1 ≈ 15-20 g

24 June 5 mi N. California City, Kern Co., California

1210 Crotalus scutulatus active 0915 hr 790 g 925 + 75 mm

1211 Crotalus cerastes active 0920 hr 120 g 450 + 30 mm

3.4 mi N. California City (Mojave-Randsburg Rd) on Neuralia Rd. Kern Co., California

1212 Masticophis flagellum AOR/DOR 1127 hr 310 g 1025 + 335 mm

21 June 7.2 mi NE Big Pine (Hwy 395) on Hwy 168, Inyo Co., California

1213 Crotalus mitchelli DOR

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12 January

Caniqal, Provincia Alajuela, Costa Rica

1214 Centrolenella ~~ilex~~ 1440 m C. prosoblepon

1215 Centrolenella ~~ilex~~ 1440 m C. prosoblepon

≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1216 Bufo haematiticus

1217 Eleutherodactylus fitzingeri

1218 Smilisca sordida

13 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1219 Bufo haematiticus

1220 Bufo coniferus

1221 ~~Eleutherodactylus~~ Leptodactylus melanonotus

1222 Eleutherodactylus fitzingeri 1020'

1223 Dendrobates pumilio

1224 Anolis ~~limifrons~~ lemurinus carp 1645

1225 Anolis ~~tropidolepis~~ lionotus 190 m along creek coll. M. Grayum

1226 Rana warscewitschii 190 m along creek coll. M. Grayum

1227 ~~Hyla~~ Smilisca sordida ≈1945 hr on leaf, 1 m

14 January

1228 Stomach contents of Leucopternis albicollis (F.G. Stiles 1903, 822 g), grasshopper

1229 Eleutherodactylus ransfordi 1335 hr, 1100', red on thighs

1230 Rana warscewitschii 1357 hr, 1180'

1231 Dendrobates pumilio 1411 hr, 1140'

1232 Rhadinaea decorata 1436 hr, 1160'

1233 Lepidophyma flavimaculata 1500 hr, 1200'

1234 Lepidoblepharis ~~lugubris~~ xanthopygma ≈1600 hr

1235 Imantodes cenchoa coll. C. Fonz

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14 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1236 Rana warszewitschii coll. C. Gomez

1237 Eleutherodactylus cerasinus coll. C. Gomez red on thighs

1238 Eleutherodactylus bransfordi coll. C. Gomez

1239 Anolis humilis coll. C. Gomez

1240 Eleutherodactylus bipsorcatus coll. M. Grayeem red on toes & fingers

1241 Eleutherodactylus 1945 m ~~bipsorcatus~~ fitzingeri

15 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1242 Leptodeira septentrionalis 11.5 g

1243 Bufo ~~holdridgei~~ ~~coccifer~~ marinus

1244 ~~Eleutherodactylus~~ Leptodactylus melanonotus

1245 Rana warszewitschii

1246 Anolis bipsorcatus darkish bluish slate w/black spots 10.7 g

16 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1247 Dendrobates pumilio 1260', ≈1200 m

1248 Spheromorphus cherriei ≈1200', ≈1215 m 2.7 g

1249 Eleutherodactylus minus coll. C. Gomez black mask

17 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1250 Felis onca scat

1251 Dendrobates pumilio

1252 Eleutherodactylus ~~sp.~~ rugulosus small red spots on dorsum

1253 Eleutherodactylus ~~sp.~~ rugulosus small red spots on dorsum

1254 Eleutherodactylus
1255 Eleutherodactylus
1256 Eleutherodactylus
1257 Eleutherodactylus
1258 Eleutherodactylus

all bransfordi
red on thighs

Greene, H.

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17 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1259 Eleutherodactylus biporcatus

1260 Eleutherodactylus red on thighs, rusty dorsal stripes (bransfordi)

1261 Anolis

1262 Anolis humilis dewlap orange-red w/ white flecks & gold border

1263 Anolis stripe on dorsum, by Rio Guasimo

1264 Anolis lionotus dewlap orange-yellow

1265 Lepidoblepharis xanthostigma near Q. Cartarana, coll. C. Pringle

1266 Anolis coll. A. Mena Rojas

1267 Anolis coll. A. Mena Rojas

1268 Eleutherodactylus fitzingeri middorsal light stripe coll. A. Mena Rojas

1269 Eleutherodactylus cerasinus tan backs red on thighs coll. A. Mena Rojas

1270 Eleutherodactylus cerasinus red on thighs coll. A. Mena Rojas

1271 Oxybelis brevirostris 24.3g coll. A. Mena Rojas

1272 Dendrophidion vinitor 32.5g coll. M. Grayum

18 January 10 km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1273 Micrurus nigrocinctus 85g 755+380 coll. Jorge

1274 tadpoles (lot)(6) flooded grassy area

1275 ~~Eleutherodactylus~~ Leptodactylus melanonotus

1276 ~~Eleutherodactylus~~ Leptodactylus melanonotus

1277 Bufo ~~holdridgei~~ ~~coccifer~~ marinus

1278 Bufo ~~holdridgei~~ coccifer

1279 Rhadinaea decorata 4g coll. M. Grayum

1280 Eleutherodactylus cerasinus coll. A. Hartshorn

1281 Eleutherodactylus cerasinus coll. A. Hartshorn

1282 Eleutherodactylus orange on hind legs, light dorsolateral stripes (bransfordi) coll. A. Hartshorn

1283 Eleutherodactylus mimus coll. A. Hartshorn

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18 January 10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1284 Anolis 36g green, dewlap dark w/ white borders coll. A. Mena Rojas

1285 Bufo melanochloris coll. A. Mena Rojas

1286 Imantodes coll. A. Mena Rojas

Rio Peje drainage

1287 Atelopus varius coll. A. Mena Rojas

1288 Bufo haematilicus

19 January 10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1289 Eleutherodactylus fitzingeri coll. G. Hartshorn

≈1.5 Km W. of R. Guasimo

1290 Dendrobates melanotropis 195g, ≈450m coll. A. Mena Rojas

1291 Eleutherodactylus bipsorcatus 45g removed from HWG 1290

SC removed

1292 Leptophis depressirostris 65g ≈325m coll. G. Hartshorn

1293 Bothrops nasutus 24g ≈375m coll. G. Hartshorn

1294 Rhadinaea decorata 5.5g, ≈350m coll. A. Mena Rojas

1295 Rhadinaea decorata ≈310m tail tip lost 4.8g in capture coll. G. Hartshorn

1296 Eleutherodactylus ~~sp.~~ rugulosus coll. G. Hartshorn

1297 Eleutherodactylus bipsorcatus coll. G. Hartshorn

1298 Eleutherodactylus cerasinus bright red prox. in groin coll. G. Hartshorn

1299 Eleutherodactylus bransfordi red in groin rusty dorsolateral stripes coll. G. Hartshorn

1300 Dendrobates pumilio 1280' 1030 h

SC removed

1301 Dendrophidion vinitor ≈50g coll. G. Stiles

1302 Oxybelis brevirostris ≈400 m, near R. Guasimo 2.4g coll. C. Pringle

1303 Bufo melanochloris ≈400 m near R. Guasimo coll. C. Pringle

dewlap yellow-orange w/ light flecks

1304 Anolis lionotus 600-640m, Rio Guacimito, coll. C. Pringle

dewlap w/ white, brown, yellow flecks 4.5g

1305 Anolis capito 500 m, near Rio Peje, coll. M. Grayum

1306 Anolis limifrons dewlap white w/ yellow spot

1307 ~~Anolis~~ Spheronorphis cherrie

1308 Atelopus varius 600-640m, R. Guasimito coll. I. Chacone & C. Pringle

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19 January 10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1309 Atelopus varius — coll. I. Chacón & C. Pringle, 600-640 m, Río Guacimito
1310 Atelopus varius
1311 Atelopus varius
1312 Atelopus varius

20 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1313 Anolis limifrons 570 m dewlap yellow & white w/ orange spot
1314 Eleutherodactylus cerasinus
1315 Atelopus varius

21 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1316 Atelopus calling ♂ varius
1317 Atelopus varius
1318 Eleutherodactylus fitzingeri 710 m on finca
1319 Anolis lionotus dewlap orange w/ white flecks 1725 hr
1320 Smilisca phaeota on leaf ≈200 hr
1321 Anolis limifrons ♀
1322 Anolis biporcatus dewlap white streaked w/ black or brown

22 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1323 Ameiva festiva Río Peje coll. C. Gomez
1324 Leptophis ~~depressirostris~~ aphanitulla 135 g 1077+631 SC removed Río Peje coll. C. Gomez
1325 Eleutherodactylus cerasinus bright red thighs, yellow eyes coll. C. Pringle
1326 Eleutherodactylus rugulosus 43.5 g 1135 hr, 1900' eyes & stripe mottled or copper, belly white
1327 Eleutherodactylus biporcatus 1620' died in bag
1328 Bufo haematiticus
1329 Atelopus varius 900 m coll. G. Hartshorn
1330 Mastigodryas melanolomus 270+93 5.0 g coll. A. Mena Rojas
1331 Xenodon rhabdocephalus coll. A. Mena Rojas

Greene, H.
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23 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1332 *Bufo coniferus* coll. C. Pringle

1333 *Anolis biporcatus* dewlap bluish white w/brown scales and darker splotches 18.3g 95mm SV mating scar on left

24 January ≈10 Km WSW Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1334 *Leptophis depressirostris* 1245m, 73g, 685+381

1335 *Chironius grandisquamus* 5c removed 610g 1177+671mm 1334m

1336 *Felis onca* track cast in parafin

1337 *Leptodactylus pentadactylus* 165g

1338 *Smilisca sordida*

2 February Finca da Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1339 *Felis onca* scat 500m marker on Holdridge Trail

1340 *Felis onca* scat ≈925 m marker on Far Loop Trail

6 February Finca da Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1341 carnivore scat (*Eira*?)

1342 *Felis onca* (?) scat

1343 *Felis onca* (?) scat

1344 *Felis onca* (?) scat

1345 carnivore scat (procyonid?)(didelphid?)

8 February

1346 animal remains – carnivore kill?

9 February

1347 *Norops capito*, stomach contents only

10 February

1348 carnivore scat

11 February

1349 *Felis onca* scat (sloth)

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13 February — Finca La Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1350 Prey item of *Norops humilis* (see field notes)

15 February

1351 *Felis onca* scat CC < 902 m

17 February

1352 *Felis onca* scat Holdridge Trail 325 m

15 February — Cerro de la Muerte, Prov. , Costa Rica

1353 *Felis cf. concolor* scat Coll. Chris Leahy

7 March — Finca La Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

1354 *Felis onca* scat, new property atajo

~~10 March~~

~~1353 *Norops capito* (stomach contents only)~~

1355 *Coendou mexicanus* (foot only - predator kill)

10 March

1356 *Norops capito* (stomach contents only)

17 March

1358 *Pseustes poecilonotus* (snake released, stomach contents saved - 4 rats)

4 May

1359 *Pituophis melanoleucus*

5 May

1360 *Masticophis flagellum*

~~7 May~~

1361 *Crotalus cerastes*

7 May

1362 *Crotalus scutulatus*

Greene, H.
1983

7 May California, San Bernardino Co., Kelso Dunes
1363 Pituophis melanoleucus active 0945 hr 390g 940+142 mm
California, Inyo Co., 4.6 mi W. Darwin Wash Rd on Hwy 190
1364 Crotalus cerastes fresh DOR ≈2040 hr
20 May California Contra Costa Co., Briones Regional Park
1365 Eumeces skiltonianus (stomach contents 1 Lampropeltis getulus)
22 May California, Contra Costa Co., 1.5 mi E Bear Creek Rd on Alhambra Valley Rd.
1366 Pituophis melanoleucus fresh DOR 1320 hr 540g 1080+205 mm
2 June California, Alameda Co., Mines Rd. Sn Tesla Rd.
1367 Pituophis melanoleucus stomach contents (snake released)
coll. M. T. Mendonca. 6 Microtus. Snake 43g 470+79 mm ♂
9 September ≈2 mi N. California City, Kern Co., California
1368 Crotalus scutulatus AOR/DOR 0006 hr
5 mi N. California City, Kern Co., California
1369 Crotalus scutulatus 0948 hr 700g 920+71 mm ♂
10 September 1.1 mi S. Kelso Dunes Rd on Kelbaker Rd., San Bernardino Co., California
1370 Crotalus scutulatus juv. AOR 2028 hr. 9.7g 262+21 mm
11 September 23.5 mi N. Kelso RR Crossing on Kelbaker Rd, San Bernardino Co., California
1371 Crotalus cerastes AOR 2135 hr 140g 505+49 mm
0.7 mi N. Kelso RR Crossing on Kelbaker Rd., San Bernardino Co., California
1372 Crotalus cerastes AOR 2223 hr 24.5g 330+22 mm
12 September Pisgah Crater, San Bernardino Co., California
1373 Hadrurus
3 October Jct. Kelbaker Rd & I40, San Bernardino Co., California
1374 Crotalus scutulatus AOR 1530 hr coll. J. H. Carothers 743+55 mm 2308
August Finca La Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica
1375 Lachesis muta

Greene, H.
1983

8 November Costa Rica, Prov. Cartago, Parones Coll. F. Antonio
1376 *Lachesis muta* ≈80cm ♀ scat only, deposit 12Nov83

Greene, H.

1984

24 March — 6.1 mi E. Flynn Creek Rd on Orr Springs Rd, Mendocino Co., California

1377 Charina bottae 81.3 g ♀ 498+61 mm

1378 Charina bottae 53.1 g ♂ 409+66

1379 Thamnophis couchi 24.2 g 387+145

1380 Thamnophis elegans 65.1 g 518+177 mm

1381 Thamnophis sirtalis 43.5 g 473+64+?

1382 Taricha rivularis

1383 Contia tenuis

31 March — 6.1 mi E. Flynn Creek Rd on Orr Springs Rd, Mendocino Co., California

1384 Aneides flavipunctatus juvenile

3.9 mi. E. Flynn Creek Rd on Orr Springs Rd., Mendocino Co., California

1385 Aneides ferreus

7.7 mi S. Comptche on Flynn Creek Rd., Mendocino Co., California

1386 Aneides lugubris

1387 Dracophis punctatus

14 ~~April~~ May — Pioggah Crater, ~~4.7 mi~~ W. of RR on Natland Trails Hwy, San Bernardino Co., California

1388 Crotalus cerastes AOR ~~2020hr~~ 12.5 g 237+21 mm

1389 Crotalus cerastes AOR 2020hr 55 g 430+48 mm

1390 Crotalus cerastes AOR 0.8 mi W. of RR 38.5 g 329+30 mm

1391 Crotalus cerastes AOR 4 mi W of RR 15.5 g 272+25 mm

1392 Rhinocheilus lecontei AOR 3.6 mi W of RR 35 g 425+62 mm

1392 Chionactis occipitalis AOR 2.6 mi W of RR

1393 Chionactis occipitalis AOR 0.5 mi W of RR

1394 Chionactis occipitalis AOR 1.6 mi W of RR

1395 Arizona elegans DOR 2.6 mi W of RR

1396 Chionactis occipitalis ≈6 mi W of RR DOR

1397 Chionactis occipitalis 4.4 mi W of RR AOR

Greene, H.
1984

14 May Near Pisgah Crater, 2.8 mi E of RR tracks on National Trails Hwy,
~~1398~~ San Bernardino Co., California
1399 Chionactis occipitalis AOR

1400 Chionactis occipitalis
Pisgah Crater, San Bernardino Co., California
1401 Arizona elegans ~~A~~ D OR ~~3.2 mi~~ 2.6 mi W. of RR 11g 313+40mm
1402 Arizona elegans AOR 74g 585+93mm
Near Pisgah Crater, San Bernardino Co., California
1403 Arizona elegans AOR 3.2 mi E of RR 9.7g 320+42 mm
1 ≈5 mi W. of Ludlow on National Trails Hwy, San Bernardino Co. California
1404 Phyllorhynchus decurtatus AOR
15 May Kelbaker Rd E of Granite mtns, San Bernardino Co., California
1405 Hypsiglena torquata under Yucca log 330+51mm 13.5g
17 May Hwy 190 between Darwin Wash Rd and 4000' Vista Lookout, Inyo Co., California
1406 Trimorphodon biscutatus AOR 15g 430+72
1407 Trimorphodon biscutatus AOR 17.5g 410+78
1408 Crotalus mitchelli AOR 8g 250+16mm
1409 Crotalus cerastes AOR 19g 265+21mm
1410 Pituophis melanoleucus AOR 70g 625+95mm
1411 Phyllorhynchus decurtatus DOR 5g 206+30mm
2 mi E. of Darwin Wash Rd on Hwy 190, Inyo Co., California
1412 Phyllorhynchus decurtatus AOR 2230hr 5.5g 202+30mm
10 mi W. Darwin Wash Rd on Hwy 190, Inyo Co. California
1413 Lichanura trivirgatta DOR 12.5g 300+40mm
6.9 W. of Darwin Wash Rd. on Hwy 190, Inyo Co., California
1414 Crotalus cerastes AOR 245g 566+36

Greene, H.
1984

17 May 23 mi W. Darwin Wash Rd on Hwy 190, Inyo Co., California

1415 Crotalus cerastes AOR 80g 497+50mm

36.4 mi W. Darwin Wash Rd on Hwy 136, Inyo Co., California

1416 Crotalus cerastes DOR 130g 526+36 mm

18 May 3.2 mi W. Paramint Springs on Hwy 190, Inyo Co., California

1417 Trimorphodon biscutatus AOR 2044 hr 112g

Hwy 190 between Darwin Wash Rd and 4000' Vista Lookout, Inyo Co., California

1418 Trimorphodon biscutatus AOR 18g 435+91mm

1419 Trimorphodon biscutatus AOR/DOR 18.5g 421+82mm

1420 Chionactis occipitalis AOR

1421 Crotalus mitchelli DOR

1422 Crotalus cerastes AOR 12g 241+15mm

Between Paramint Valley Rd. and Darwin Wash Rd. on Hwy 190, Inyo Co., California

1423 Crotalus cerastes AOR 28.5g 320+23 mm

1424 Phyllorhynchus decurtatus AOR 4g 185+30mm

26 May Pisgah Crater, San Bernardino Co., California

1425 Coleonyx variegatus AOR 2052 hr at RR tracks

1426 Arizona elegans AOR 2103 hr 1.2 mi W. of RR tracks 86g

1427 Crotalus cerastes AOR 2114 hr 1.8 mi W of RR tracks 25 g

1428 Crotalus cerastes AOR 2122 hr 1.4 mi W of RR tracks 41.5g

1429 Phyllorhynchus decurtatus AOR 2126 hr. 0.8 mi W. of RR tracks 32.5g

1430 Trimorphodon biscutatus AOR 2137 hr. 2.1 mi W of RR tracks 95g 765+121mm

1431 Arizona elegans AOR 2146 hr 0.6 mi W. of RR tracks 85g

1432 Phyllorhynchus decurtatus AOR 2201 hr. 2.1 mi W of RR tracks 30.5g

1433 Crotalus cerastes AOR 2204 hr. 1.9 mi W of RR tracks 21.5g

27 May Pisgah Crater, San Bernardino Co., California

1434 Crotalus mitchelli 0856 hr. on flow, w/in 10 m of edge 315g

Greene, H.
1984

27 May — Pisgah Crater, San Bernardino Co., California

1435 Chionactis occipitalis fresh DOR at 2037 hr, 1.7 mi W. of RR tracks 9.5g 272+45 mm

1436 Trimorphodon biscutatus AOR 2106 hr, 2.1 mi W of RR tracks 38.5g 560+105 mm

1437 Phyllorhynchus decurtatus AOR 2109 hr, 2.1 mi W of RR tracks 9g 250+21 mm

1438 Chionactis occipitalis AOR 2111 hr, 1.6 mi W of RR tracks 9.5g 256+52 mm

1439 Arizona elegans AOR 2125 hr, 1.9 mi W of RR tracks 16g 350+51 mm

1440 Chionactis occipitalis AOR 2130 hr, 0.7 mi W of RR tracks 7.5g 215+30 mm

1441 Phyllorhynchus decurtatus 2145 hr AOR, 1.7 mi W. of RR tracks 7.8g 730+111 mm

1442 Arizona elegans AOR 2156 hr, 1.4 mi W. of RR tracks 30.5g 395+65 mm

1443 Phyllorhynchus decurtatus AOR 2202 hr, 1.5 mi W. of RR tracks 27.5g 410+32 mm

1444 Phyllorhynchus decurtatus AOR 2202 hr, 1.3 mi W of RR tracks

1445 Coleonyx variegatus AOR

28 May — 6.3 mi. S. Kelso on Kelbaher Rd., San Bernardino Co., California

1446 Chionactis occipitalis AOR/DOR 2133 hr

11 August — 11.5 mi W. Painted Rock Rd. on I-8, Maricopa Co., Arizona

1447 Crotalus cerastes under lava boulder, 1630 hr

≈5 mi S. Painted Rock Dam on Painted Rock Rd., Maricopa Co., Arizona

1448 Rana yavapaiensis AOR ≈2200 hr

13 August — 0.5 mi NE of Loop Rd on Rd to Wukoki Ruins, Wupatki Natl. Monument, Coconino Co., Arizona

1449 Salvadora hexalepis DOR ≈0915 hr

9.0 mi W. Ludlow on National Trails Hwy, San Bernardino Co., California

1450 Arizona elegans AOR 2132 hr

0.2 mi W. Ludlow on National Trails Hwy, San Bernardino Co., California

1451 Phyllorhynchus decurtatus AOR 2153 hr

14 August — Pisgah Crater, San Bernardino Co., California

1452 Chionactis occipitalis 0.6 mi W. of RR, AOR 2035 hr

Greene, H.
1984

27 October Pisgah Crater, San Bernardino Co., California

1453 Crotalus cerastes AOR 1827 hr, 4.9 mi W. of RR, 451+31 mm, 85.9 g

1454 Crotalus cerastes AOR 1900 hr, 2.0 mi W. of RR, 412+39 mm, 61.2 g

——— 4.6 mi. W. Darwin Wash Rd on Hwy 190, Inyo Co., California

1455 Trimorphodon biscutatus coll. J.H. Carothers, 18 June 1983 SV 16 1/8" TL 3"

9 June Pisgah Lava Flow, San Bernardino Co., California

1456 Chionactis occipitalis, 1.0 mi. W of RR, 229+60 mm, 7.2 g Coll. A. Hacker

1457 Chionactis occipitalis, 2.0 mi. W of RR, 243+48 mm, 8.0 g Coll. C.A. Luke

1458 Chionactis occipitalis, 1.3 mi W of RR, 226+48 mm, 7.9 g Coll. A. Hacker

1459 Chionactis occipitalis, 0.7 mi W of RR, 217+44 mm, 6.0 g Coll C.A. Luke

1460 Chionactis occipitalis, 1.2 mi W of RR, 184+38 mm, 3.8 g Coll. C.A. Luke

1461 Phyllorhynchus decurtatus, 5.2 mi. W. of RR, 198+17 mm, 4.8 g Coll. Unknown

1462 Phyllorhynchus decurtatus 0.5 mi. W of RR, 412+59 mm, 42 g, Coll. A. Hacker

1463 Crotalus cerastes, 0.1 mi. W of RR, 290+27 mm, 28.2 g Coll. C.A. Luke

1464 Crotalus cerastes, 1.2 mi. W of RR, 385+43 mm, 47 g Coll. C.A. Luke

1465 Crotalus cerastes, 1.1 mi W of RR, 300+? mm, 31.5 g Coll. J.H. Carothers

1466 Crotalus cerastes, 0.8 mi. W of RR, 405+? mm, 79 g Coll. A. Hacker

1467 Crotalus cerastes 1.2 mi W of RR, 245+? mm, 16.4 g Coll. C.A. Luke

2 June 1468 Rhinocheilus lecontei, 5.2 mi W. of RR, 2215 hr 494+82 mm Coll: Unknown

——— U.C. Physical Plant, Jct. Centennial Dr. and Grizzly Peak Rd., Berkeley, Alameda Co., California

1469 Crotalus viridis Coll. Unknown, 2 June 1982

——— Pisgah Lava Flow, San Bernardino Co., California

1470 Crotalus mitchelli Coll. Unknown, 16 June 1983

——— 1.5 mi. S. of ~~Trona Rd.~~ Trona Rd on ~~Hwy 178~~ Hwy 178, San Bernardino Co., California

1471 Masticophis flagellum, D.O.R., Coll. Unknown, 18 June 1983

Greene, H.
1984

——— 19.5 mi N. of I-40 on Kelbaker Rd, San Bernardino Co., California

1472 Crotalus cerastes Coll. Unknown, 17 June 1983

——— Pisgah Lava Flow on National Trails Hwy, San Bernardino Co., California

1473 Crotalus cerastes, 0.5 mi W. of RR, Coll. Unknown, 15 June 1983

1474 Crotalus cerastes, 9 mi W of RR, Coll. Unknown, 15 June 1983

1475 Crotalus cerastes, 1.6 mi W of RR, Coll. Unknown, 15 June 1983

1476 Crotalus cerastes, 1.1 mi E of RR, Coll. Unknown, 15 June 1983

1477 Crotalus cerastes, 3.2 mi W of RR, Coll. Unknown, 15 June 1983

——— 10.3 mi N of I-40 on Kelbaker Rd, San Bernardino Co., California

1478 Rhinocheilus lecontei, Coll. Unknown, 17 June 1983

——— 5.9 mi. W of Darwin Wash Rd on Hwy 190, Inyo Co., California

1479 Crotalus cerastes, Coll. Unknown, 18 June 1983, $14\frac{3}{4}$" + $1\frac{7}{16}$"

9 June Pisgah Lava Flow on National Trails Hwy, San Bernardino Co., California

1480 Arizona elegans 1.3 mi W of RR 694+116 mm, 110g Coll. C. A. Fuke

10 June Pisgah Lava Flow on National Trails Hwy, San Bernardino Co., California

1481 Crotalus mitchelli, ≈250 m S. onto Flow, Coll. D. A. Good 812+66 mm

——— 0.3 mi. E. of Darwin Wash Rd. on Hwy 190, Inyo Co., California

1482 Lampropeltis getulus Coll. J. Carothers 18 June 1983 SV 30 1/8" TL 4 9/16"

——— 5.7 mi N. Baskenta, Tehama Co., California

1483 Coluber constrictor DOR, Coll. C. Mayer & S. B. Hedges 28 June 1981

H. Greene
1982-1984

Journal

1982 Costa Rica
Calif: Mendocino, Inyo, San Bernadino,
Riverside, Kern Cos.

1983 Calif: Kern Co.

1984 Calif: Mendocino Co.
Costa Rica
Oklahoma: Cimarron Co.
New Mexico: San Miguel, Cibola Cos.
Calif: Orange, San Bernadino cos.

H. Greene
1982-1984

Journal

1982

1982 Costa Rica
Calif: Mendocino, Inyo, San Bernadino,
Riverside, Kern Cos.

Greene, H.
1982

7 March Left San Francisco ≈ 0030 AM, arrived San Jose, Costa Rica ≈ 1530. Cab to hotel $7.00, Hotel Galilea $12 + tax. Dinner 110 colones (40 colones/$). On the flight down got a nice sunlit view of the Nicaraguan coast - in some places could see highlights of sheet of water among trees over big expanse of coast - swamps? Incredible clouds.

8 March Spent an hour after breakfast (40.7 col.) looking for botas de hule - rubber boots. Couldn't find any in the mercado or elsewhere. Caught Sansa flight to Rio Frio (160 colones), after a lot of trouble in the airport (I had a reservation but no ticket - which was better than vice versa). Picked up at Rio Frio by Bruce Williamson (OTS course coordinator) and Mo Donnelly (USC student). Rode to Puerto Viejo for beer and boots (240 colones), then by canoe across Rio Puerto Viejo to La Selva.

9 March Up early, and out on West River Trail w/ Mo. Went as far as end of property, then returned to AC lab and took a circle by way of the New Research Trail and back down the West River Trail. No snakes, but lots of frogs and lizards. <u>Dendrobates pumilio</u> everywhere, some calling. Two

Greene, H.
1982

9 March (continued) Finca La Selva, Puerto Viejo de Sarapiqui, Provincia Heredia, Costa Rica

Phyllobates lugubris under logs. Several small frogs that I thought were Eleutherodactylus, but were E. bipocatus, a very small Rana warschewitschii, and a very small Leptodactylus pentadactylus. These were in litter active, beside trail. Saw several Norops humilis in litter and N. limifrons on low vegetation. Saw a tiny greenish Eleutherodactylus on a leaf ≈ 15 cm off the ground. 2 Bufo haematilicus hopping in the litter. A skink (Spheromorphus cherrieri?) under a log, as was a Lepidophyma — it was under a fallen log's outer shell, ≈ 1 m × 20 cm. 3 juvenile Ameiva festiva in sun on the trail at 10:38, w/ 20 m of each other. After lunch, ≈ 1345, a student ran in to say that a large coral snake was crossing a trail in the "Ecological Reserve" ≈ 100 m from the station. When I arrived it was just moving off the trail in full sun, a large ♀ (?) Lampropeltis triangulum. It thrashed & struck repeatedly when grabbed by the tail, and bit my jeans. This species has apparently not been collected at La Selva before. From ≈ 1430 – 1615, walked East River

Freese, Id.
1982

9 March (continued) Road and to Holdridge Trail 400, where a tree fell ≈1100 today. I found a Bolitoglossa colonnea (see 11 March) under a palm sheath 1m X 30 cm, on the ground. Craig Guyer found a Peripatus in a bromeliad on the fall tree, and therefore until today it must have been many meters up. (Last night talked to David Clark about the 3 Lachesis muta that he's seen here. He was very impressed by their cryptic appearance, especially the way the irregular white dorsal spots look like sunlight splotches on the forest floor.). From 2030-2230 walked the New Research Trail w/ Mo Donnelly and Craig Guyer – found a rare frog, Eleutherodactylus altae, sitting on a "Panama Hat Plant", <1m above ground. Brilliant orange flash marks. Also brought back a small adult Septodactylus pentadactylus (missed a larger ♂) for telemetry. (see next page).

10 March Walked trail to arboretum and part of New Research Trail from 0700-0830. Saw a few anoles and small frogs, no snakes. Rained hard for a short time before dawn today, so everything was dripping. Saw either a broadbilled (Electron) or Rufous (Barypthengus) motmot land on a branch w/ a caterpiller in its bill, still holding to a leaf

Shaw, H.
1982

10 March (continued) The bird shook the leaf free as it swallowed the caterpillar, while perched on a limb ≈3 m above the ground (trail).

(NB: Forgot to note that last night on the edge of Pejibaye Grove, where the New Research trail start, I found a Mastigodryas melanolomus asleep 2 m above ground on leaves - I only saw it because of the bright orange belly - and earlier, ≈300 (?) m out on the New Research Trail, I spotted a Tepidophyma flavimaculatum - seemingly a large adult - sitting in an opening ≈1 m up on a large tree, w/in the upper boundaries of the buttresses. After a minute or two w/lights on it the lizard turned and went down a hole. It was present as before when we returned by the tree later.)

Went out on New Research Trail from 2030-2230 w/ Beth Braker - saw no snakes, a few small Eleutherodactylus on leaves, and an adult ♀ Anolis capito on a palm leaf ≈.5 m above ground beside the trail. Tepidophyma was not visible in the hole I saw it in last night.

11 March Started down the West River Rd, but got caught by an OTS student (Sally Horn) who had seen a "2 m" black snake in the arboretum. We went back to where she'd seen it, initially crossing the trail at the opening of the large

Greene, H.
1982

11 March (continued)

clearing. When we got there it had left, but at ≈0915 I found it motionless in grass under a bush. Seized it before it started moving, and it immediately began striking and thrashing. After lunch we "measured" it at ≥2.1 m in total length. Has a few ticks. Then walked West River Road, Research Trail, and a section of an old Tower Trail. Saw numerous Eleutherodactylus and Anolis, and a juvenile ~~its~~ Rana Warszewitzii. Got back at 1205. (NB: Just handled the Boiteglossa colonnea and it did some great watch-spring flip flops, as well as walked pretty fast.) About 1430 Joyce Tsuji (U. Washington) brought me an adult Leptophis depressirostris from the edge of the grove near the AC lab, from which I regurgitated a frog's legs. Walking back at 1545 Manuel Santana and I saw a rufous motmot land on a branch — very large bird! (The frog legs from the Leptophis are apparently Leptodactylus pentadactylus — a juvenile). After dark walked out New Research Trail to release L. pentadactylus — Lepidophyma was not at it's hole in the tree. Nothing else of note seen. (L. pentadactylus from Leptophis has femur length of 23 mm).

Greene, H.
1982

12 March Went to arboretum and released *Chironius grandisquamus* w/ transmitter at 0746 hr. Kept track of it (mostly in a hole in a creek ravine bank) for most of day. at ≈1130 hr found a *Kinosternon* that fits *scorpioides* except that it has a black ~~carapace~~ plastron (not orange). ≈1500 got called to looked for a snake at ≈700 m on the East River Road – went, couldn't find it, and returned to the *Chironius*. At 1640 the *Chironius* left it's hole, disappeared over the edge of the embankment, and got called that the snake was in view again at 700 m East River Road. It was a *Bothrops asper*, at least 5-6' long (later guess 7'+), crawling among scattered plants in mud flats at the bottom of a steep embankment. I sloshed out to w/in hook's length (≈5') of it, tried to gently lift it, and it turned towards me. at this point I discovered that I was over knee deep in mud and that the mud was deeper than my snake hook – and that I could only move my legs w/ great difficulty. Thought about trying to kill the snake if it advanced on me, but it suddenly moved very fast across a small stream and about 4 m away. I jumped to a ~~floating~~ log across the stream (after dragging myself out

Green, H.
1982

12 March (continued) on a closer log). Saw that all the surrounding "ground" was loose mud, and abandoned the snake. It was probably the most "calmly aggressive" and by far the fastest viper I've ever encountered. I didn't feel scared during the whole thing, but during supper and for a couple of hours later I felt pretty weird about being stuck in the mud near that snake.

13 March Out to Arboretum by 0700 w/ Manuel Santana to look for my radiotagged Chironius. Got the signal right away, along the Quebrada El Suza, but spent 2 hrs. futilely searching the barbs and heavy understory for it. Then ≈0930 saw it on a small tree limb directly over the creek, ≈10m up. Watched it move across the limb, down a vine thinner than it, and down into brush. (See separate notes.) ≈1400 Dave and Debra Clark brought in an Oxybelis aeneus adult from near the AC lab. It musked heavily as I palped a juvenile Ameiva festiva (Head-first swallowed) from it's stomach. Also gaped, hung limp, and then bit vigorously on my pants when hung free from my hand.

Greene, H.
1982

14 March Out about 0730 to a tree fall where Manuel last radiolocated the *Chironius* yesterday. Sat til after 10, taking temperatures and waiting for the snake to show — but I finally peeked in the log and saw the transmitter lying in the floor of the hollow. It has been chewed by a rodent but seems OK. Caught a *Cerrhotenella prosoblepon* nearby. On the way back, got a gravid ♀ *Sphenomorphus cherriei* in leaf litter along the Arboretum Trail. Before we went out, Craig Guyer caught a small adult *Pseustes poecilonotus* — after much teasing I got it to briefly inflate, but it never gaped or struck. After lunch walked East River Road to successional plots and back, w/ side trips on a couple of loops. Easily hand caught a ♂ *Norops capito*. No snakes.

15 March Calibrated a transmitter and then from 1000-1200, walked to ≈600 m on the Research Trail & back, then out West River Rd & back. Hot & sunny — lots of *Anolis festiva*. Saw several rufous motmots (*Baryphthengus martii*) near each other an calling. Saw a gray-necked wood-rail (*Aramides cajanea*) beside a small stream — flicked its tail almost constantly. Also saw 2 what might be wood-quail (*Odontophorus* sp.).

16 March Walked around arboretum ≈0730-0930. Found a little gecko under a small log, which I think is *Lepidoblepharis*. Saw several *Sphenomorphus*

Greene, H.
1982

16 March (continued) chemici active on surface of leaf litter. At 0840, near the crest of the Arboretum (left of the trail) I saw a ≈18" snake crawling in dappled sunlight toward a log and thought sure it was a Bothrops asper – but it is a Xenodon rhabdocephalus. As soon as pinned it strikes, gapes, flattens, thrashes – looks incredibly like a viper. When I let it bite a snake bag, the fangs are rotated to a surprising degree and repeatedly stabbed the cloth. After a few seconds there were obvious large wet areas of saliva/venom where the snake's mouth held the bag. Got live weights from Ricki Van Berkum to match the pickled Ameiva festiva I palped out of the Opylelis aeneus – the lizard has a snout vent of 50 mm or perhaps slightly greater allowing for shrinkage. She has live ones of SV 51, wt. 3.4 g, and SV 49, wt. 3.1 g. I'd estimate the prey at 3.5 g, since her lizards have been in sacks for a while. From 1400-1600 walked out West River Rd, turned trash in cacao grove, walked to ≈400 m on New Research Trail, over to arboretum and back. At 1423 I found a Rhadinaea decorata (fide Savage key, but has bright orange belly) crawling across trail at ≈670 m

Greene, H.
1982

16 March (continued) on the West River Rd. It apparently was startled by me, as it was crawling fast when I spotted it. Didn't bite. It is a gravid ♀ w/ two eggs. Turned 6-8 piles of limbs and trash in the cacao grove, but no herps. Saw 1 Spheromorphus active ≈ 1500 h on leaf litter at trail edge. From ~~0830~~ 2030 - 2130 h walked slowly down West River Road to 150 m — saw no snakes or lizards, 3 Eleutherodactylus sp.

17 March Walked East River Road and Loop Trail til noon. Saw & photographed ♂ Anolis capito (SV 68 mm) swallowing an orthop head first (grasshopper had greenish legs w/ black spots - maybe Eumastax). The anole was 1 m up on the trunk of a small tree, head up at 0813 h. Saw a few anusans and anoles and one Basiliscus sp. at 1945 h put an 8 g ♂ (SV 46 mm) Bufo hematiticus in w/ the Xenodon. Snake seems to be too upset — strikes at my movements and defensively (?) at Bufo as it hops by. Put sack back in for cover and will leave toad over night.

18 March Bufo had been eaten by Xenodon when checked at 0700. From 0730-1030 walked around arboretum, then out Sura Trail to ~~South~~ West Boundary Trail, then to New Research Trail and to station. At 0855 I found a small Mastigodryas melanolomus crawling on palm litter beneath a palm at the back of Arboretum. Very snappy. Disgorged 2 Norops humilis (intact one had SV 35 mm) that had been swallowed head first.

Greene, Id.
1982

18 March (continued) At 0953 we saw a Caiman crocodylus ≤1.5 m total length swim downstream a few meters, until just below us on the little bridge where the Quebrada El Surá crosses the Old ~~South~~ West Boundary Trail. Rather black looking, and the head quite cryptic when resting on the surface. I took one picture and was moving closer when it suddenly snapped its jaws, thrashed and swam upstream and out of sight into some vegetation ≈ 15 m away. Stream here is a few meters wide and less than 0.5 m deep. After stopping at station for refresco, we (Manuel Santana & I) walked the East River Rd & Far Loop Trail til it crossed the Quebrada El Salto. On the way back, at about 50 m from the ~~West~~ East R. Trail on Loop trail, I caught a small adult Mastigodryas melanolomus crawling rapidly on the trail away from me at 1146. It thrashed, spun, bit repeatedly, and smelled bad. From 1945-2200 walked w/ Ricki VanBerkum, Manuel Santana, and Beth Brake - went to Rio Puerto Viejo by "Rafael's House" - found Sphiliscia baudini sitting on tree limb, 2 m aboveground. Then walked to Q. El Salto on Far Loop Trail, where Manuel and I waded downstream to the rapids, searching both banks for herps. Saw none. Beth found a hylid on a low palm near the stream, and a green-boned hylid (?) near the Puerto Viejo - too dry for herps tonight?

Greene, H.
1982

19 March Walked from 0800 – 1145: East River Road, Holdridge, East Hartshorn, Cethel, Far Loop just onto East River Rd, and back via entire Loop Trail. At 0942hr I found a clear cat track in mud in the swamp at a crossing of a small stream – from the size it must have been either Felis onca or F. concolor, and since the latter has only been seen here once the former is more likely. Two minutes later my pulse was 102, but no cat ahead. At 1014hr at ≈606 m on the Far Loop Trail an adult Erythrolamprus mimus crossed the trail and crawled ≈3 m rapidly before I caught it. Partly cloudy, sunny. While crawling the snake appeared uniform purple or gray, and I couldn't tell it wasn't a Micrurus until after I'd pinned it and had a good look at the head. It thrashed and tail coiled as I caught it. At 1040hr I caught a large Leptophis depressirostris in the trail swallowing a treefrog headfirst. Was down the waist and disgorged it when I seized the snake. Snake thrashed and musked. This was at ≈ 150 m on the Far Loop Trail. The frog was making gular movements, and we rinsed it w/ water. When checked at 1300, it seemed fine. Frog keys to Smilisca sordida in Savage, SV 33.5mm, Head Width 11.5mm, wt. 5.5g. (No – it is S. puma' fide Jay Savage) Weights and measurements for some other recent catches follow:

Greene, H.
1982

19 March (continued)

Mastigodryas melanolomus, 18 March, 11.5 g, SV 338, tail 102 has juvenile color pattern

M. melanolomus, 18 March, 47 g, SV 590, tail 221
spots still clear but hard to see because colors are same as ground color.

Rhadinaea decorata ♀, 16 March, 8.5 g, SV 217 mm, tail 132

Erythrolamprus mimus ♂ 19 March, 80 g, SV 611 mm, tail 108+(?)

Leptophis depressirostris, 19 March, 150 g, SV 1025 mm, tail 600 mm

L. nebulosus - just brought in by Manuel Santana from near the AC Lab. Has something in stomach, but I can't get it out. 18 g, SV 430 mm, tail 280 mm

Ninilisca vandini, 18 March, 34 g, SV 75 mm

NB: When handled for measuring, the subadult Mastigodryas bit readily; the big L. depressirostris gaped and inflated and struck repeatedly.

After dinner went on a grasshopper census w/ Beth Braker. Just as we started, P. DeVries found a small Bothrops schlegeli ≈2 m up on a small tree beside the East River Road, ≈100 m (?) from the station. It was loosely coiled, resting on tendrils/leaves of a vine growing on the tree. Didn't rush off when lifted free, but thrashed and bit sideways when restrained. Color very reminiscent of the Sibon longifrenis which was found nearby in very similar circumstances a couple of weeks.

Greene, H.
1982

20 March — Left about 0730 w/ Manuel Santana – walked East River Rd to Far Loop Trail, out it to Central Trail to ≈700 m, and back via Near Loop Trail. At 0830 I grabbed a large (≈2 m) Chironius grandisquamus as it crawled over a fallen log – snake thrashed, inflated body, and struck. This was at 290 m on the Central Trail. At 0958 grabbed a tiny Dendrophidion vinitor (?) crawling rapidly off the trail at 480 m on the Near Loop. Handling it later in the lab I saw it do a very Pseudes-like defensive display, except that the neck was not inflated vertically. Napped in afternoon. Entire evening shot by emergency w/ the cook, Eric, who seemed to be having a heart attack – took him by litter and jeep to Puerto Viejo, where an ambulance eventually took him to San Carlos – turned out to be gall bladder trouble. (See 22 March)

21 March — Walked to 700 m on the Central Trail w/ Manuel Santana and Beth Brakes. Only snake was a Rhadinaea decorata at 275 m on the Near Loop Trail, crawling in sun at 1006 h. Thrashed and mushed when grabbed. After supper went frogging w/ Jay Savage, Manuel, and Beth, – 2 Bolitoglossa colonnea on leaves <1 m above ground, 1 moving, 1 still; several 1 Hyla elaeochrora, 1 H. elaeochrora, several Eleutherodactylus.

Greene, H.
1982

22 March What a walkin' day! Left at 0830 w/ Manuel Santana and Jay Savage – Walked Far Loop Trail to Hartshorn to Southwest Trail to West Boundary Trail to Near Research Trail and back in to Station. Found a gravid ♀ (2 eggs) Rhadinaea decorata crawling in sun/shade on leaves on trail at 0948 hr, 770m on SW Trail. On West Boundary Trail saw and photographed what we thought were Black Chachalacas but are evidently Crested Guans. Found a Coniophanes fissidens crawling on trail at 1126 hr on the Near Research Trail at 150m. Just before lunch Edwin Paniagua, the Station guard, reported seeing a Lachesis muta on the Central Trail near the Old South Boundary. At ≈1300 hr we (Edwin, Manuel, me) walked to ≈1850 m on this trail and then ≈10 m in to the forest in a low, swampy place. The snake was exposed on dark soil behind (≈1.5m) a large, old fallen tree. There were scattered short plants but little leaf litter. Evidently a female – short tail and Edwin says males are smaller – and certainly over 2 m long. She lay in a loose coil w/ head on body, motionless while I took many photos. When we finally touched her w/ a pole she tongue-flicked, and finally crawled slowly away into a thicket. Never struck or made any movements

Henry H.
1982

22 March (continued) I would call threatening – seemingly a very calm snake. Edwin walks about twice as fast as I do, and the last ½ was very hilly – about 8000 m round trip. (NB: forgot to mention on 20 March that I spent 2 hrs in early afternoon helping some people photograph snakes – and caught 2 juvenile Mastigodryas melanolomus crawling on leaf litter in the open in the Arboretum). (See 24 March for additions).

23 March Spent most of day radiotracking a Chironius grandisquamus at 290 m on the Central Trail. (See separate notes.). Saw a Dasyprocta eating something nearby at one point, and Manuel saw a Nasua. We've had scattered showers lately, and today seemed very humid.

24 March Spent ≈0800 – 1050 and 1330 to 1630 following a Chironius grandisquamus E. of 290 m on the Central Trail (Manuel watched it other times). Saw an adult ♂ Basiliscus plumifrons on the Station steps at ≈1300. (Forgot to mention on 22 March that walking out to the Lachesis sight we saw tracks of Tayassu and Felis onca on the Far Loop Trail, and some large mammal jump out of a tree and crash off – probably Nasua narica.) Beth Braker brought in an adult ♀ Norops capito which we stomach pumped – got a fair

Frost, H.
1982

24 March (continued) sized moth larvae out of it (Beth has data). She also brought me a large predator scat (Felis onca ?), full of coarse hair and a claw – sloth? This was found this morning (<10:00 hours) at the big treefall at ≈700 m on the Central Trail.

25 March arrived at 290 m on Central Trail and picked up signal of Chironius grandisquamus at 0814 hr. Looked for it til 0900, then left w/ Manuel via the Swamp Trail to the Sabalo-Esquina Trail (by way of cutting across Plot 4 & the 1973 Plot). At ≈0945 hr at 1145 m on the Esquina Trail found a large Eleutherodactylus biporcatus active in leaf litter beside the trail. At 1010 hr at ≈1710 m on the Esquina Trail I spied a ≈1 m Bothrops asper in a hole at the base of a stump ≈1.2 m high. This is on the east side of the trail in shade and adjacent to the river. Photos, then hooked it out and caught w/out trouble. Found and collected feces of Felis onca that seem to contain Tayassu fur at 1780 m on the Esquina Trail, then started back. As we passed the stump, I peered in a hole on the south side and saw a huge Bothrops asper, obviously

Greene, H.
1982

25 March (continued) swollen w/ a meal. Tried to hook it out after photos, but it started out the other side. Hooked it onto trail, but couldn't get it's head pinned before it moved into thicket toward river. A very beautiful snake - almost black and gold and very velvety. Didn't seem particularly aggressive, but fast. Photographed the snake w/ Life Magazine people after lunch in the arboretum. From about 1630-1745 walked to 290 m on Central Trail to check Chironius (got signal) - no snakes. Went out w/ Life people from 1930-2100 on the Research Trail. Found a juvenile Leptodeira septentrionalis at 2038 h at about 80 m on the New Research Trail. It was crawling slowly up the axil of a young Welffia palm leaf, ≈ 0.5 m above ground. Saw several small Eleutherodactylus on leaves - food for a prowling snake?

26 March Walked all morning w/ Manuel Santana and Michael ~~Santana~~ Melford (photographer from Life magazine): went to 290 m on Central Trail and got signal from the Chironius. Then walked by way of El Swampo Trail to stump where I caught the Bothrops asper and released it. Didn't see big one. Spent the afternoon helping Michael photograph snakes.

Freese, H.

1982

26 March (continued) at supper David Clark brought in a Sibon nebulata from near the AC lab, in forest. When handled it made a rather tight coil, not quite a ball, and "cocked" the quadrates such that its head was very quadrangular. Forgot to mention that at 1105h at 720m on the Holdridge Trail, I saw a large adult Ameiva festiva moving at a moderate rate (as in normal foraging behavior) on a large fallen tree, about 1m above the ground.

27 March Walked to 290 m on Central Trail, got signal of Chironius grandisquamus in forest ≥100m NNW of original capture site. Then walked across El Swampo Trail & then out Sabinal-Esquina Trail to 2300 m. at 1035h saw a Rana, maybe R. palmipes, jump into the creek at ≈2200m. Took a swim in the waterfall near the station just before lunch. Got a very large Sibon nebulata that Craig Guyer found crossing the trail by the AC Lab. Behaved as the other one - head made ~~to~~ very wide by spreading quadrates. I haven't been keeping careful notes on birds, but among those seen are the following (names are as in a mimeographed "checklist of the Birds of La Selva and Vicinity" by F. Gary Stiles,

Greene, H.
1982

27 March (continued) 1977:

Grey-necked Wood-Rail, Aramides cajanea - along small stream crossing West River Road

Tinamous - heard calling frequently, and two seen. One was definitely a Little Tinamou, Crypturellus soui, and one (♀ w/young) was probably a ~~Slaty~~ Great Tinamou, Tinamus major.

Chestnut-bellied Heron, Agamia agami - evidently a very rare bird, seen on the Quebrado Sabalo.

Spectacled Owl, Pulsatrix perspicillata - seen once on a limb in front of the Station, and once flying across the East River Road ≈ 100 m from the Station.

Violaceous Trogon, Trogon violaceus - one seen on limb of tree in front of Station.

Broad-billed Motmot, Electron platyrhynchum - seen at least once on trail to the AC Lab.

Great Rufous Motmot, Baryphthengus martii - seen and heard frequently in forest.

Black-cheeked Woodpecker, Centurus pucherani - seen in tree just N. of station

Flint-billed Woodpecker, ~~Phloeoates~~ Phloeocaastes guatemalensis - pair near trail to AC Lab.

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27 March (continued)

Slaty Antshrike, Thamophilus punctatus - pair seen in forest ≈600 m on Cortina Trail.

Sulphur-rumped Flycatcher, Myiobius barbatus (maybe not - cf. Tawny-breasted) - one seen near bridge in the Arboretum

Band-backed Wren, Campylorhynchus zonatus - one seen in tree, nesting (?) around clump of bromeliads, at edge of Station.

Montezuma Oropendola, Gymnostinops montezumae - heard and seen frequently.

Crested Guan, Penelope purpurascens - ≥3 seen near West ~~River Rd~~ Boundary Trail.

Sun Grebe, Heliornis fulica - one seen on the Quebrada El Salto where it crosses the Far Zoop Trail.

28 March

Spent most of the day helping the Life Magazine people, loafing, napping, and getting ready to go. After lunch Bret Whitney (?), leader of a group of birders for Victor Emmanuel Tours, Austin, TX, told me he saw a Semiplumbeous Hawk, Leucopternis semiplumbea eating a snake ≈40 ft. up in a tree. Snake's head and part of body were gone. Said it had bright red or orange belly and a green or olive dorsum. He also saw a Nunbird and a Motmot each eating a frog in the Arboretum yesterday.

Greene, H.
1982

29 March Up early and left by jeep for San Jose w/ Donna Haupt (Life Reporter), Beth Braher, and Helen Young. Stopped for pictures at a rubber plantation and at El Salto Falls, and made it into San Jose ≈11 AM. After lunch and checking w/ the National Parks office, rented a tiny Toyota pickup and drove to Santa Rosa National Park, arriving after dark. Ate a huge, delicious steak at El Bramadero in Liberia. Put up hammock in the dark, under a guanacaste tree.

30 March Santa Rosa National Park Guanacaste Province, Costa Rica

Greene, H.
1982

16 April — Left Berkeley in the early after noon w/ John Cadle and 16 students in Zoology 165 for Mendocino Co. Stopped in vicinity of Skaggs Springs in Sonoma Co., but couldn't get access. Cadle then went by Coastal route and stopped for some collecting, while I took 2 cars up Hwy 128. Camped at Hendy Woods State Park.

17 April — 1.7 mi N. Hwy 128 on Flynn Creek Rd., Mendocino Co., California

This is an area of streamside forest beside a stream on the west side of the road, w/ open areas and ties from an abandoned railroad line. Spent about 1 hour here and got *Aneides flavipunctatus*, *Ensatina*, *Taricha granulosa*, *Batrachoseps*, *Hyla*, *Ecnemecs*, ~~and~~ *Gerhonotus coeruleus* (DOR), and *Thamnophis elegans* (DOR).

6.1 mi E. Flynn Creek Road on Oss Springs Rd., Mendocino Co., California

This is coniferous forest (great vistas) on a ridge at a place where there is an abandoned truck, lots of lumber strewn about, and other trash. There are small, shallow pools at the roadside w/ many tadpoles of *Hyla* and a few transforming frogs too. Turning boards and some logs in the

Greene, H.
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17 April (continued) forest, we found Bufo boreas, Batrachoseps, Aneides ferreus, A. flavipunctatus, Ensatina, Taricha granulosa, Scelaporus occidentalis, Thamnophis elegans, and Charina. One Charina (HWG 1126) was a very battered juvenile, and one was an adult male. From the latter (HWG 1127) I palped 2 nestling moles (Scapanus sp.) that had been swallowed head first.

9.1 mi E. Flynn Creek Rd. on Orr Springs Rd., Mendocino Co., California

This is an old road cut w/ a small trickle in it, coming down a steep hill on the S. side of the road. We found Aneides flavipunctatus, Batrachoseps, Taricha granulosa, Ensatina, Hyla, Ecumeces, Gerrhonotus coeruleus (1 active at water's edge ≈ 1400 hr), Scelaporus occidentalis, and 4 Diadophis. The Diadophis were under logs and all tail coiled when handled or, in case of the largest, when its cover was lifted. Claudia Fuke found Lynx rufus feces on ground beside the stream.

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17 April (continued) Dark Gulch, 1 mi N. of Albion, Mendocino Co., California
Spent ≈1 hour here, 1600-1700, but got no Rhyacotriton. The places on the upper slopes that were formerly rivulets were dry, tho seemingly OK spots nearer the main stream also had none. Did find Batrachoseps and Dicamptodon larvae.
Baston Gulch, 4.3 mi E. of Hwy 1 on Hy 128, Mendocino Co., California
This is an old road going NE from the Hwy, bordered on the left by a swamp and the right by a steep slope. Fallen trees and other litter suggest recent high flooding. Found Ambystoma gracile egg mass on a tree limb ≈1 m above the water, as well as two others in water (these had algae). Also Hyla, Ensatina, Batrachoseps, Taricha rivularis, T. granulosa, and a small Thamnophis sirtalis. I found Lynx rufus feces (not fresh) on a moss covered log across the trail, ≈1 m up.

18 April 17.2 mi E. of Hwy 1 on Hwy 20, Mendocino Co., California
This is open forest of large trees and many fallen logs. Here we found

Stearns, H.

1982

18 April (continued) Aneides ferreus, A. flavipunctatus, Batrachoseps, Ensatina, Eumeces, Gerrhonotus coeruleus, and Thamnophis elegans.

4.1 mi W. of Willets (at Hwy 101) on Hwy 20, Mendocino Co., California

This is a place of open grass and oak covered slopes, w/ many old logs and stumps. We found Aneides flavipunctatus, Ensatina, Taricha granulosa, Eumeces, Sceloporus, Gerrhonotus coeruleus, and G. multicarinatus. Weather seemed perfect – warm to hot, very sunny, but this is the first of such this spring and soil under logs was wet and cold. Perhaps that's why we found so few snakes (e.g. no Lampropeltis or Crotalus).

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7 May Left Berkeley ≈1030 hr w/ David Cundall (Lehigh U.), Kurt Schwenk, and George Schwenk. Arrived at Darwin Falls parking lot ≈2240, after dinner in Olancha and a beautiful full-moon drive. Got 2 Crotalus cerastes in the Owens Valley at 2057 & 2124 hr, after moon was up and before it was really bright. Very windy at times.

8 May Darwin Falls Canyon, Inyo County, California
Up at 0700. From ≈0800-1030 we ~~split~~ split up and looked for lizards on the canyon floor & walls, N. of the parking area. Not many lizards out, but we got 3 Sauromalus obesus, 1 Callisaurus, and 1 Cnemidophorus. I missed a Uta and Kurt saw a Crotaphytus bicinctores. Walked to the falls and back, leaving ≈1330-1400. Saw a kingfisher, a little blue heron, and a hawk w/ a lizard or snake in its talons. Saw numerous Cnemidophorus and 1 Bufo boreas in the bush part of the canyon. Was surprised to see a large section dry because of a diversion ditch carrying water to a pipe.

Trona Road, 1.0 mi. N. jct w/ Hwy 395,
Found an adult live Crotalus mitchelli on the road at 1551 hr. It rattled. No rocks nearby - creosote shrub - but hills on

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8 May (continued) either side of road w/in ½ mile. Winds were really high and all sky obscured by dust by the time we reached Kramer Junction, so we decided to get a room in Barstow. Drove to Pisgah, walked around at dusk, and road hunted. Got 5 Coleonyx and 1 Crotalus cerastes, the latter containing a large prey item.

9 May Pisgah Crater, San Bernardino Co., California
Arrived here ≈ 0830, after motel in Barstow & breakfast at the Sidewinder Cafe in Newberry Springs. Guy behind us there claimed to be on the "Fish & Game Commission" and had a good natured argument w/ me about whether the world would be better off w/out sidewinders! I asked if we should bulldoze down the cliffs 'cause people fall off them, but he quickly told me that was a poor example — cliffs don't hide and jump out at you. Very windy at the crater and we saw relatively few. Cnemidophorus tigris was the most commonly seen lizard, and one pair (?) broke from mating as I approached. Female ran off, leaving the male w/arched tail and everted hemipenis. Also got 1 Uroscaurus, 2 Uta, 4 Uma, and I saw 2 Sauromalus. Saw several carnivore scats and Dave saw tracks that indicated a bobcat x snake encounter. Ate lunch in Ludlow.

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9 May (continued) Amboy Crater, San Bernardino Co., California
Stopped here for ≈30 minutes at ≈1400h, where the flow is adjacent to Natl. Trails Hwy. Saw 2 Sauromalus, 3 Dipsosaurus, and 1 black ♂ Uta. Both here and at Pisgah saw numerous fresh chunks of lava, evidently crowbarred off by chuckwalla hurlers. Got a room at Motel 6 in Indio, then drove to the large isolated rocky hill E of Cahilla Co. Park, at the end of Jefferson Street. Spent ≈1h at ≈1730h here — very windy — saw nothing; ate dinner in Indio, and since bank sign at 1945h said 64°F and it was very windy, we decided not to road hunt tonight.

10 May Snow Creek Canyon, Riverside Co., California
Came here after breakfast and hunted lizards ≈0900-1200. Sunny and warm when wind down, but more often chilly and extremely windy. Saw a few Uta down low and several Cnemidophorus on the flats by Snow Creek Village. Up on the boulders saw several Petrosaurus and mossed them w/out difficulty, but saw few Sceloporus orcutti and they were very wary.

28.3 mi S. Lucerne Valley (at Hwy 18) on Hwy 247, San Bernardino Co., Cal.
Stopped here at ≈1530-1630 — creosote scrub w/ large boulder piles near road on each side. Saw 2 Sauromalus, several Cnemidophorus,

Freese, H.
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10 May (continued) and caught 7 Uta and 1 Sceloporus magister. Discovered my camera isn't working! Got rooms in Newberry Springs, dinner at Sidewinder Cafe, and rode hunted on National Trails Hwy from 1930-2130 hr. Got 2 Crotalus cerastes & 1 Coleonyx. Moon still not up when we quit, but still cold and windy.

11 May Pisgah Crater, San Bernardino Co., California
Breakfast at the Sidewinder, then arrived here ≈0830 hr. Parked on road to crater, ≈½ way from National Trails Hwy. Walked around for two hours — cold, windy, partly cloudy. Saw 1 Sauromalus in crevice, 1 Uma, several Uta and Cnemidophorus. Collected 4 Lynx rufus scats and saw tracks in sand at least twice. Dropped George off at the bus station in Barstow, and ate lunch. Went to Cal City & got room — rained on the way.

2.5 mi NW Mojave (Hwy 58) on Oak Creek Rd., Kern Co., California
Spent 1 hour here searching under Joshua tree logs — cloudy, windy, chilly. Got ≈15 Xantusia and 2 Sceloporus magister under logs — a yearling ♂ and a larger juvenile ♀.

12 May 3-5 mi N. California City, Kern Co., California
Arrived at dirt parking area on W. side of Tortoise Reserve (coming from jct. Phillips & Neuralia Rds.) at 0900 and walked around there til 1100. I went

Greene, H.
1982

12 May (continued) west to the first ridge, then N to the road and beyond on a 2-track road for ≈100 m. Then W to next ridge, S. to main road, E to the 1st ridge by the road, and S. for several 100 m on the poor dirt road just W. of the ridge. Saw 12 Gopherus, from 100 mm carapace to large adults, several eating. Also Uta, Cnemidophorus, and 1 Gambelia (escaped in hole). At 1030 hr saw an adult Crotalus scutulatus crawling slowly across the road ≈20 m ahead of me – coiled, rattled, then tried to crawl off as I approached. Struggled when pinned, and had palpable food in stomach. From 1100–1300 drove S. on the dirt road, then back to parking area and W. to Newdalia. Saw numerous Cnemidophorus and Callisaurus, 6 Gambelia (caught 4), and 5 Phrynosoma. Two of the Phrynosoma were found at the roadside at 1250 hr, ♂ riding on the ♀ – even ran for several m like that. His penes were not out when captured, so he was evidently tending rather than copulating. Lunch & gas in Mojave. Drove to Darwin Falls and hunted rocky slopes from 1700–1830 – saw nothing. Road hunted starting at 2000 hr – went to Vista lookout on 190, back to Panamint Valley Rd, then W to Olancha for dinner and back to Darwin Falls canyon to sleep

Greene, H.

1982

12 May (continued) at ≈ 1AM. Got a peculiarly patterned Coleonyx as we descended into the Owens Valley (HWG 1159) and a subadult Crotalus mitchelli between the Vista lookout and Darwin Road.

13 May Up at 0700 and on the road ≈ 8. Saw two Gophenus crossing Trona-Wildrose Road just south of the supposed N. boundary of its range (a ridge/pass), at 9.2 mi (0901 hr) and 5.1 mi N. of the San Bernardino Co. line. Got a DOR adult Crotalus cerastes (several hours old) at 0955 hr on Garlock Rd. Got a small adult Masticophis flagellum AOR 1021 hr on Hwy 14. Snake mushed and bit when seized (and I tore my pants!). Saw several large Sceloporus magister on boulders and on roadside along Redrock-Randsburg and Searles Station Roads. Coffee in Mojave.

Oxnard, Ventura Co., California

1415-1450 we turned trash in a vacant lot on the NE side of Harbour Blvd. Got 6 Anniella & 2 Uta, and saw numerous other Uta and/or Sceloporus. Arrived in Berkeley ≈ 2300 hr.

15 May Corral Hollow Rd., San Joaquin Co., California

arrived here to road hunt w/ Kurt Schwerk & David Cundall ≈ 2015 hr. Saw juv. Gerhonotus multicarinatus running/lateral undulating across road at dusk (2032 hr), and a very large Lynx rufus bounded across at ≈ 2045. Got Bufo boreas (2047 hr) and Scaphiopus

Greene, H.
1982

15 May (continued) hammondi (x 2055 hr). Found 4 live Crotalus viridis, 2 live Pituophis melanoleucus, and 1 live Arizona elegans – all catalogued. Also saw 2 Pituophis and 6 Crotalus too smashed to save, all no larger than those we collected. Were somewhat harassed by a policeman from Site 300.

11 June Corral Hollow Rd, San Joaquin Co., California
Trip to Castle Rock w/ Zoology 107 class. Cool & windy. Just as darkness fell some students saw a Lampropeltis getulus crawling along the base of the bluff. My car saw no snakes, a few toads (Bufo boreas and Scaphiopus hammondi), and a badger, Taxidea taxus, on the road.

20 June Left Berkeley ≈1530 hr w/ Kristine Tollestrup and drove to Lee Vining for the night. Stopped to turn logs at a likely looking spot in the Sierra, but nothing.

21 June

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Journal

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Costa Rica
Calif: Kern Co.

1983

9 January Left Berkeley on 8AM flight to Miami. Early dinner w/ Jay & Becky Savage, then flight to Costa Rica, arriving at ≈9PM. Picked up at air port by Cathy Pringle and others.

10-11 January Spent two days in San Jose getting a collecting permit from Parques Nacionales, buying supplies, etc. We stayed at the Hotel/Apartamento Mozaica - very nice & friendly.

12 January Cassigal, Prov. Alajuela, Costa Rica 1440m

On the way to the Zona, our Toyota broke down at this little junction. Michael Grayum, a plant collector from U. Massachusetts, tore down a Monstera aeroid from ≈2.5 m up a tree, beside a small stream to the right of the road at the first curve past Cassigal. In one leaf axil were 2 small Centrolenella that seem to be C. ilex.

Camp beside Quebrada Cantarana, ≈10 km WSW Puerto Viejo de Sarapiquí, Provencia Heredia, Costa Rica

We arrived here ≈1600, after a long bumpy trip in w/ land cruisers and a tractor - the latter, surprisingly, unable to cross the Rio Peje. Set up camp and walked around. Frogs calling (Eleutherodactylus, hylid?) but couldn't find them. Not raining. Bufo in camp ≈1900. Walked up hill after dinner. Saw Sylvilagus on road cut, no frogs on vegetation. ≈2050h found an Eleutherodactylus & a Smilisca sitting on a.

1983

12 January (continued) large downed log in grass behind our camp. Also an Ameiva moving beside one (!) log, which escaped. These were ≈ 2145 hs.

13 January at 0545 Carlos Gomez found a large Bufo haematiticus in camp. Began raining ≈0600. After breakfast I walked up the stream just W. of camp, took the smaller stream that branches just S. of the ford, and walked up it (≥100 m) til it forked. Saw a ringed kingfisher just before I entered the forest. at the ford, but nothing along the stream. Next turned logs in the grassy area just S. of the ford, and found a Bufo coniferus under a small log, almost black in color. Then a small Eleutherodactylus active in low grass. Walked ≈200 m W. on road from ford, nothing on leaves or under bark or logs. After lunch walked E. on track out of camp, to the fence at someone's ranch. Met Hartshorn, Stile Mario, and the rangers, then Carlos and Isidro. They had seen a Tamandua and tracks of Felis onca, white faced Monkeys Mazama, Tayassu (collared) and paca. Walking back got a Dendrobates pumilio and an Eleutherodactylus. at ≈1645 a ♀ Anolis limifrons at base of a support post in camp. George and Michael brought in an Anolis tropidolepis and a Rana warszewitschi found at ≈190 m along the big stream by camp. The ranger saw a "water opossum" (Chironectes?)

1983

13 January (continued) along the same stream last night. As dusk comes it is still raining — has almost continuously all day. Walked up hill from camp after dark, 1900-2015, saw & caught only a single small hylid (juv. Smilisca or H. ebracata?). Very few frogs calling, despite the rain — still pouring at 2200.

14 January Still raining and we all slept late and drank coffee til mid morning, except Gary Stiles, who walked up the trail to the "ranch" and shot a white rump, Leucopternis. [While in San Jose I talked to Jeanne Stout, aquatic biologist from Michigan State U., about snakes at La Selva. She once saw a tinnamou chick running down a trail, chased by a Spiloles. She also once heard a rattling in dry leaves and saw a small Lachesis making the noise by vibrating its tail. Since we arrived here Gary Hartshorn told me he measured a Lachesis at La Selva that was over 3 m long; he has photos and exact measurements.] Yesterday I talked to Jorge, a 19 year old who lives here and cuts pasture for the owner (who doesn't live here). He carries a 16 guage shotgun because he fears jaguars, and ties his little dog (≈ beagle) up all the time for the same reason. Says last year a jaguar near here killed ≈20 dogs, and many men hunted for it til it was killed. Rain continued all day. After lunch I walked 1300-1600 hr on a newly cut trail

1983

14 January (continued) W. of the Quebrada Cartasara. The trail goes up just E of the small side stream I followed earlier. Today I walked up and down the trail over two ridges. Both Eleutherodactylus, Rana warszewitschii, and Dendrobates pumilio active on the forest floor; and Rhadinaea decorata and Lepidophyma flavimaculatum under small logs. The Rhadinaea squirmed into the mulch when I tore open the log, flashing the orange belly, and discharged cloacal contents when handled. It is very opaque. Carlos Gomez & Isidro Chacon went farther on the trail and brought me some frogs, a tiny Anolis, and an Imantodes cenchoa apparently killed ~~on~~ yesterday by the trail cutters. I went to a pool just upstream from the Quebrada to bathe, searched under some cobbles among moss, ferns, and liverworts, and caught a Lepidoblepharis ~~xanthostigma lugubris~~. The rangers saw large jaguar tracks today, in the forest W. of camp. After dinner I walked up the trail E., saw nothing on trail but found Eleutherodactylus hopping in grass as I got near camp on return. Only occasional frogs calling.

15 January Stopped raining ≈ ½ hour during the night ~~fide~~ Stiles, and again about 8AM, but started up again. These Temporales last 3-5 days according to Hartshorn.

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15 January (continued) This morning at breakfast the ranger talked about local mammals. Said still sees jaguar tracks frequently. also tapirs and collared peccary, but says white lipped peccaries are hunted out. From 0945 - 1140hr I walked up the Quebrada Cantarana from camp and back. As soon as one leaves the cut over area it's nice open forest on either side. Just at the forest edge I pulled down a fair size bromeliad from ≈3m up a small tree beside the stream and found a Teptodeira inside w/opaque skin. Wriggled and cloacal discharge, moderately smelly. Shortly thereafter saw an anolis lionotus run on a boulder at the water's edge. Saw no other herps, raining the whole time. After lunch tore up several large bromeliads on the ground in grass by stream - nothing. Walked in grass at base of forest trail, got moderate size Eleutherodactylus and missed a bigger one w/ a bright stripe down middorsum. Found a tiny Bufo holdridgei hopping on a fallen log at the forest edge. Walked forest trail out several hundred meters, got only a juv. Rana warszewitschii and a Peripatus. Raining hard all the time and I got cold - came back ≈1530hr find Stiles has shot a bare neched umbrella bird. After dark I walked E of camp for 30 minutes and saw nothing. At 1945hr Stiles found a ♀ Anolis biporcatus in grass at a black light and sheet he set up to attract moths.

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15 January (continued) It was more or less solid light green when first handed to me, with yellow eyelids. After a few minutes of handling it had dark splotches on the dorsum. Seems to be a ♀ w/a very small dewlap, bluish white w/black spots.

16 January Left at 1000h w/ Michael Frayum and Eladio Lopez (rangers) Started up the Quebrada Cartagena but w/in 100 m turned W. into forest and bushwacked for ≈1½ hours, checking in holes, buttresses, etc. w/a light for snakes. Came to newly cut trail, turned south, and w/in 20 minutes encountered Hartshorn, Mario Rodriguez, and the two trail cutters at a stream. By then we had caught (and seen) only a single Dendrobates pumilio and seen tracks ~~and~~ of paca. One of the trail cutters, Tonio, had just caught a Spherotorophus chenisi on the next ridge, which we checked out. Hartshorn called it cloud forest. Even farther, Tonio had seen Tapirus tracks. Eladio, Michael, Gary Hartshorn and I then walked downstream, starting at ≈1245hs. We soon met a larger stream coming in from the right, then a nice waterfall, then a much larger waterfall in a very deep gorge which we had to skirt. Arrived at camp ≈1430 h. Isidro Chacon and Carlos Ramez had been in forest off the trail east of camp, and brought me a pretty Eleutherodactylus. They saw "Monos Colorados," Ateles. Since

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16 January (continued) around 1400 the clouds have seemed higher and it more or less stopped raining for ≤ 1 hour. Also the creek seems a little lower today, so we are all hoping for better weather. Forgot to mention that at the point where the new trail met the branch of Quebrada Cartarana, where we met Tonio and Gary, there was a pile of spines at the side of the creek that appeared to be Proechymys.

17 January Left camp ≈0745 in rain w/ Gary Hartshorn, going up the road E. A few hundred meters from camp we crossed a fence into a clear cow pasture and found fresh scat and one clear track of Felis onca. A few meters further, scat we didn't recognize, maybe peccary (smelled like pig). Caught a small Anolis along the trail. Reached a little thatched shed, and caught a larger Anolis w/ an orange dewlap. Turned N and followed an old trail along a ridge paralleling the Rio Guacimo, which we could hear and at one point, had a spectacular view. Saw several Dendrobates pumilio and got two Eleutherodactylus. El. along the ridge ≈1040'. Finally hit a cauil or Trocha — a sort of trail / rut-road and by walking E., hit the river at 1145 hs. Got Eleutherodactylus w/ red spots on dorsum along the cauil. The Rio is large and swift. An Anolis w/ a middorsal stripe was on a down tree ≈100 mm

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17 January (continued) in diameter & 0.5 m off ground. Belly yellow. As we walked W. on the canil I caught an Anolis lionotus that jumped into a large puddle on the very muddy trail. Reached Quebrada Cartazara and walked NNE until we reached the road we'd driven in on. Between the two I caught a fair sized Eleutherodactylus that has red thighs and light rusty dorsolateral stripes. By 1337 hr we were near a ridge top w/ wild cacao growing nearby. Again I noticed many earthworms under surface objects. Back to camp ≈1420 hr. Antonio Mera Rojas had cut more trail SW of camp today, and brought me Anolis, Eleutherodactylus, and an Oxybelis brevirostris. With considerable prodding it inflated the arteries slightly and drew back the head and gaped, then slowly struck. Also kept the tongue extended at times when we photographed it. Cathy Pringle brought me a little gecko found among rocks by the Q. Cartazara, which I catalogued as a Lepidoblepharis but might be a ? Sphaerodactylus. Michael Grayum brought me a Dendrophidion he found in forest near the big fall on the Quebrada. It tried to bite when he seized it. The snake is generally a velvety brown w/ slightly lighter crossbands when undisturbed.

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17 January (continued) When held firmly and poked it holds anterior part of the body straight and inflates, exposing the light blue interstitial skin and causing the snake to look light and dark blue — a very striking color change. On further head-on prodding it gaped, drew back, and struck. Forgot to mention that we heard Alouetta hooting to the SE as we came back into camp this afternoon. Gary Stiles shot a Black Hawk Eagle and a Crested Hawk Eagle, the latter as it was apparently trying to catch a guan. The sun finally came out and we saw blue sky ≈1330 today, and as of 2000hr it hasn't rained since ≈0900 today. We are all in good moods for this and because collecting was better today.

18 January Very foggy this morning, but by ≈0900 partly cloudy and getting hot. I walked through flooded grassy area across Q. Cartarara and saw numerous Bufo holdridgei (two collected) and several of the fat legged Eleutherodactylus - traced a soft mew call to it, and eventually caught a couple. Also preserved a few of the large black tadpoles that are conspicuous in the larger (≥1m in greatest dimension) pools. Walked two circuits of forest trails on the first ridge, but saw only one active Anolis (cf. limifrons) and many "balas" (Parasaponera). Searched buttresses near the

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18 January (continued) Quebrada crossing, and encountered Jorge (19 year old who weeds a Peje grove near here) carrying a large Micrurus nigrocinctus he found. It was still moving, tho injured, waving its coiled tail and biting a lot. Interestingly, he had chopped off the tail tip! After lunch Jorge and I walked E to the little ranch, then N. into the forest for a few hundred meters - two hours round trip. Saw only an Anolis, a few of the Eleutherodactylus w/red thighs I'm no longer collecting, and a group of white faced monkeys. Very cloudy and humid. Back at camp, at 1536 hr, it started raining again! Quit at 1605. Mike Grayum brought in a Rhadinaea decorata; Gary Hartshorn four Eleutherodactylus that I haven't seen before, from the Guasimo Ridge trail we were on yesterday; Cathy Pringle a Dendrobates pumilio and a Bufo haematiticus from forest near the Quebrada Cartarano; and Antonio a small Imantodes, a giant Anolis, a pretty Bufo, and a bright lime green Atelopus. The Imantodes he found in a plant that he cut that sounds like Diefenbachia; it crawls when held, but shows no defensive behavior. The Anolis he knocked off a tree trunk, and it is a gravid ♀. He found the Atelopus at the highest point he's cut trail, along a stream into the Rio Peje. Found an adult Bufo haematiticus in the road between camp and the Quebrada Cartarana at ≈1930 hr.

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19 January Left ~0745 w/ Carlos Gomez on the ridge trail that goes from just W. of our camp to the Rio Peje. Carlos dropped off to set up a net for birds at a creek. Reached 1280' on the trail at 1000hr. Saw an Eleutherodactylus w/ red thighs and a couple of Anolis. Partly cloudy. Caught an adult ♂ Anolis limifrons at 1200', 1005hr. At 1300', 1015hr, heard Alouatta. Got a Dendrobates pumilio at 1280' at 1050hr. Reached an Atta nest overlooking the Rio Peje at 1400'. Went a couple hundred meters more, then turned around. Saw an adult Ameiva in a light gap tangle - appeared to be foraging and at least 1 m above ground, tho the tangle is continuous w/ the trail. Took a wrong turn and went down a trail to the Rio Peje - extremely steep, had some trouble getting up the slippery slope. Found right trail, by then very hot & sweaty. At 1214 hour, 1320', got a Sphenomorphus cherriei active in litter beside the trail. At 1345 missed a small (~3 cm) green-backed frog, maybe Rana palmipes. Saw another Sphenomorphus cherriei in sun beside the trail at 1200', 1355 hr. G. Stiles brought me a Dendrophidion he found in the morning on the trail between the largest stream that crosses the trail to the Peje and the Rio, dead when he gave it to me. M. Brayum brought in what seems to be an Anolis capito - has lots of green on sides of body. Anolis

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19 January (continued) Chacón and Cathy Pringle went east to the Rio Guasimo, across it, and up a little stream into an area of many bromeliads and much moss. They got a Bufo and an Oxybelis near the house at the Rio, more or less due east of here. They got what seems to be Anolis lionotus and 5 Atelopus (olive green, like the one yesterday) along the smaller stream. The little Oxybelis was crawling among rocks and roots near the Rio. Antonio and Hartshorn made a circuit, out the Peje Ridge trail south several kilometers, then east to the Rio Guasimo at the house and back via the canal to camp. They got a Rhadinaea decorata and a Bothrops nasutus on the trail in the morning, a Dryrobius melanotropis ≈1.5 km west of the Rio Guasimo on the way to it, and a Rhadinaea decorata and a Leptophis depressirostris on the canal back to camp. The Dryrobius was dead, and contained a large gravid ♀ frog, cf. Eleutherodactylus bipsoracatus. The Leptophis gapes and strikes. The second Rhadinaea broke part of its tail off in capture. The Bothrops sat quietly alternating w/ jumps/sidewinding for several centimeters. Only a brief shower, at sundown, all day.

20 January Left camp at 0845 hr w/ Cathy Pringle, Eladio Lopez, and Isidro Chacón, heading southeast on the "road" out of camp. After the little randito that's 20 minutes or so out, the trail is miserable. Very loose mud, at

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20 January (continued)

times like hands reach up and pull on my boots. Hot and sweaty by the time we reached the Río Guasimo. From the hill just NW of the río, we could see a couple of volcanoes in the distance. Sunny w/scattered clouds. Took a nice dip in the river, but Isidro slipped on a boulder and bruised his left shoulder (he's very sure footed and later said this didn't give him a good feeling about the day). This was ≈1000hs. crossed river and headed SE on a trail Cathy & Isidro had been on earlier. Got an Anolis limifrons at 570m. Reached Río Guasimito, ≈2020' or 640-660m, at ≈1330. Did some looking about then tried to build a fire. Wood very damp and wouldn't stay lit. Isidro, Eladio, and I were hunched around the circle of cobbles; Isidro said something about a vial of alcohol; the next thing I saw was him jump to his feet with his head totally in flames - could see only his black hair, like a halo around the fire. He froze for an instant, turned, staggered, then stumbled in to the river. I jumped up and ran to catch him, fearing he either wasn't getting it out or would fall and be further hurt on the boulders. By the time I grabbed him, flames were out and the air smelled of burned hair and skin. I hugged him and said, "¿Puede a ver?" He looked at me, then upstream, and said, "Sí, puedo a ver." [Turned out he thought there was no fire, just smoking wood, but Eladio

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20 January had put a little lit candle under the teepee of kindling. When Isidro poured out of the vial, it burst into flame and when he jerked back the flaming liquid splashed onto the ~~left~~ right side of his face. As soon as this was used up the fire went out.] We put Bacitracin ointment on his face and toothpaste on his lips, and he went for a walk in the forest to smoke and calm down. When he came back, Cathy & Eladio went 30 minutes away, to a place Eladio knew, called Finca Plastico. Came back right at dark w/ good dry wood, kerosene, ("Canfin"), and a little mirror so Isidro could see his face. Before they returned I clambered out on the moss covered boulders and found a large beautiful Atelopus. Then Isidro and I sat and talked of life, love, death, luck, the importance of eyes to a naturalist, and god (for him, el bosque y todas sus cosas). We had a good meal, but noticed ants from the nearby Atta nest have raided our bag of granola. At dusk I hear some toad that sounds like Bufo vellicens, another chorus of high pitched squeaks the sources of which I can't locate.

21 January Slept about 10 hrs poorly – I was on a slope. No rain or only a light mist, blue sky at dawn. The Atta have now eaten a hole in Cathy's backpack, but not thru the foil packed freeze dried food. We have eggs w/ cheese & ham and hashbrowns, the latter not especially liked

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21 January (continued) by our two Ticos. At 0915 hr I sit on a boulder in the stream. The stream has a lot of white water and many boulders, the higher ones w/ moss on them. The banks are bounded by small trees, many epiphytes, and hanging mosses. A morpho comes by. a little brown bird w/ a white rump patch hops from boulder to boulder and periodically onto the bank; it has a curious way of hopping and flashing the white flag (just had a talk w/ Cathy about her brother's suicide - great guy but lacked confidence, shot himself w/out leaving a note. Doing her slide show on the Zora and planning this expedition was a diversion for her.) I turn and see a lime green frog on the boulder next to me and just off shore. This Atelopus calls every few seconds, a brief chirp of ≤1 second, sometimes on elevated logs. Makes two shots (success?) at small insects, and moves a total of ≥0.5m in ≈10 minutes. Never hopped except when I finally moved to collect it. All the moves were walking on elevated logs. I could hear other Atelopus calling downstream. At 0946 hr I see a good size Anolis (lionotus?), SV≈70mm, on a rock in the shade in the stream. When I approached w/in ≈ 2m it jumped in the water and swam upstream ≈0.5m and climbed onto a boulder. I moved 1m closer, it jumped in again and swam out of sight. Walking downstream, I saw a huge log, reddish, lying right at streamside in full sun.

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21 January (continued) It is steaming in somewhat of a plume, and at first glance I am taken aback that it is on fire! Saw three other little lime green Atelopus, all on boulders in the stream. None move until I am very close, then each jumped in water and swam rapidly to another rock & climbed out. Cathy got two and Bridget got ≈ 6 little lime green ones and one of the larger variegated Atelopus — either these are separate species or respectively males and females. Because of the collecting limit I released all the little ones except the ♂ I caught calling. When placed in bag w/ the bigger Atelopus it clasped one for remainder of trip. At 1147 hr, as we packed, an Ameiva w/ bright middorsal stripe cruised through our sunlit clearing. We walked south on a little trail. At 1224 hr, 2140' el., we saw white faced monkeys. At 1245 hr, 2240' el., we reached a "cauil" (broad cut track) that is the E boundary of the Zona Protectora. Eladio cuts a 1.5 m section of a 4" thick "agra" [tetracera] vine w/ two swipes of his machete, and we drink the slightly sweet and abundant liquid that flows from it. Nearby Eladio points out a place where 2' or so of leaves are scraped up and aside and says this is where a tigre, Felis onca, rested. At ≈1300' we reached the bottom of the Rio Guacimo gorge at an el. of 2220'. Here the river bottom is large sheets of rock, not boulders; lots of moss. We

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21 January (continued) continued ≈ westward. See Tapirus ("danta") tracks at 700m el. at 1335hr, 2380' el., we paused on a ridge in the middle of a large finca. As we walked on across the finca (hot, sunny, high grass, scattered large trees left for later lumbering d'mtold), Isidro caught a good sized Eleutherodactylus in the grass at 710m el., 1351hr. As we neared forest edge, saw Felis onca tracks on trail, ~~Walked~~ 2420' el. at 1443hr. Walked in forest W and then N for ≈1 hour, saw crested guans. Finally reached a little house ≈1545 on the NW corner of cleared land, just N of where trail comes out of forest. The house has a metal roof, wood floor, faces a spectacular gorge on the west. There are a few clothes hung from plastic bags on beams, two flashlights on one wall, a fairly fresh toothbrush, and a shot bottle of something for cattle. There's a rolled up foam sleeping pad. No door on the west, what amounts to a porch. a few feet W of the house is a covered cooking area - fireplace made out of a stump, some simple shelves, and a sort of washboard. There's a thick black hose from far away that's wrapped through nearly barbed wire and provides continuous good water. It can be easily moved to the washboard, where there's a crude, homemade wire clamp to hold it. On the shelves are a few glasses, dishes, pans, spoons, some cooking grease, and some salt. Also a

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21 January (continued) a coffee sock. We all bathed w/ the hose, dried off in the late afternoon sun, and even used some talc Eladio has. [He seems to have everything and always looks fresh!] Then we have some cheese, coffee, hot chocolate, and chat about the view over the Rio Sardinaldito [on maps; Hartshorn learned that local people call it the Rio Cabalonga]. At 1715hr, Isidro is cleaning his burns and the others are cooking. Light is fading. A few big trees just beyond the cocinera are in sharp focus, almost silhouettes. A fine misty fog has descended on the gorge and the far canyon walls, making trees on the far ridge seem like apparitions. We eat soup and chicken w/ noodles, hot and tasty. A tinnamou calls in the distance. At 1725hr I go for a drink and see an adult ♂ Anolis liocnemus on a corner fencepost and by using one hand as decoy catch it w/ the other. At 1800hr there is a curtain of pink fog, such that we can see only the horizon of trees on the far ridge, in sharp focus now, and those just past the cocinera. Lots more bugs now, and we hear some sort of caprimulgids and what sounds like a quail. If she were here it would be perfect, and as is it isn't far from that! At 1806hr fog shrouds the nearly trees and the far ridge has "disappeared." Night is falling, and it's been a fine day: Isidro seems to be OK [right eye was cloudy for a few hours, but has cleared up.],

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21 January (continued) a good walk but not too tired, watched Atelopus, etc well, now this incredible dusk! at about 2000h I went out alone in a light rain after listening to two hylids squawking at each other. Got one of them immediately, a Smilisca phaeota on a bush ≈1m aboveground in high grass. Then an Anolis ? lemiphous and a big Anolis biporcatus, the latter ≈1.5m up, the former ≈0.8m above ground, both on bushes in grass. [the A. biporcatus struggled a lot, possibly the cause of the 2 or 3 skin tears I noticed later].

22 January Awoke ≈0530h after somewhat vampy night - lots of biting insects and too hot in my sleeping bag. By 0600 could see the far ridge: now the trees are various colors (instead of a wall of very dark green), and I can see Volcan Poas clearly behind the far ridge. at 0730 a Semiplumbeous Hawk landed in a nearby tree, in clear view while we had coffee. I went for a walk in the forest ≈200m south of camp, and at 0852h saw a juvenile Ameiva on the trail (bright yellow middorsal stripe). at 0920h I found fresh cat tracks (smaller than definite tigre) in mud on trail ≈300m S. of camp. About 1000h as we packed up, Isidro brought in an incredible red millipede ≈6" long, and Cathy an Eleutherodactylus w/red thighs; it was

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22 January (continued) dead from overheating, so I popped it in the remaining vial of alcohol. Eladio scanned the gorge and had five hawk eagles (sp. uncertain) probably both ornate & black in sight at once. We set out going N, first through forest then over a big finca. At 1120 hr, 1840' el., there are big Tapirus tracks on the trail. We re-enter good forest and at 1135 hr, 1900' el., I catch a very big Eleutherodactylus on the trail. Like the E. biporcatus I found during the day at La Selva last year, this one froze after one leap, was easily snatched, and struggled & because of slime was hard to hold. Started down into the Rio Sardinalito gorge and stopped for a picture w/ Eladio at 1147 hr. While we sat on the trail a Zeucopleurus albicollis landed on a limb just in front of us. We reached the bottom and crossed the Rio at 1200 hr, 1540' el. Going up the other side I caught a little Eleutherodactylus w/ a fiddle like pattern of warts at 1206 hr, 1620' el.; we reached the top at 1212 hr, 1780' el. Crossed a ravine and a ridge of finca, then down a steep slope to a little cabin beside a small fast moving stream; a small beagle-like dog out front barking and retreating to edge of woods wherever we drew near. Crossed stream and went up a long, hard slope past quite a few cows. Isidro leading and bent on reaching the top before stopping.

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22 January (continued) Finally, at 1400 hr, 570m el., reached a ridge at edge of finca where westward and northwest there is a vast stretch of forest & steep canyons. Eladio scans w/ binoculars and decides we are S. of where the Rio Peje joins two other streams. After much talk we decide that going down into the Peje gorge is a bad idea (we've seen it farther north from above) and start back over the same steep, muddy pasture slopes. ¡Hue puta! Suddenly Isidro yells "Harpia" and we run to him – says he saw a huge dark bird just overhead that must be a Harpy Eagle! Looking up I see the bird drop into a tall tree ahead, and we plunge down the gorge and up slope to the tree. Spend a few minutes searching the tops of several tall trees and then see it – a bald headed, sad looking vulture. Continue on and get a Bufo haematiticus at the base of a big tree above the creek as we return to the little house. Eladio wants to go in and make coffee, but now the dog is snarling w/ teeth bared, from under the porch. To enter would mean subduing the dog, which we don't do. We talk a little then (1645 hr) go fast to top of next ridge. Stop for can of tuna, granola, water at 1500 hr and decide to go N and look for a route to the Rio Guasimo or at least a camp site before dark. This is a problem, and Eladio sets a very fast pace

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22 January (continued)

down out of the finca and into the forest. After about an hour's hard walk through dark forest we reach a newly cleared area, in the center of which is a little house w/ a tiny new garden plot right in front. Eladio sees several things that suggest this is a finca from which Antonio and Gary Hartshorn found a faint trail to the Rio Guacimo. We set out, all worried about having to camp in the forest w/out water. Eladio is moving really fast — we are practically running down a faint trail and it is getting very dark. For a while I worry about snakes, balas (Peraponera), and falling w/ a full pack on — sure enough, Isidro gets it on one hand by one of the big black ants. ¡Hue puta! Those worries seem to be cancelled by the thought of losing the trail if I don't keep up w/ Eladio. Soon I am just jogging thru dark woods w/out thinking, surprisingly sure-footed. Cathy is a ways back, and finally Eladio and Isidro agree that Isidro will drop back w/ her. We will go on to find a place and then Eladio will return for them. Finally ≈1700 when it's almost dark in the forest, we break out into a pasture and can hear a river. Eladio yells "Gracias al Dios" twice, because we realize we're a couple hundred meters upstream from the old house we passed the first day! Eladio left and soon returned w/

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22 January (continued) the others. Minutes later we were drinking and bathing in the Rio. ¡Para Vida! Eladio is ecstatic and bubbling about our good luck. He dashes around, building a fire up in the house, fixing coffee and hot chocolate. Soon it's dark, and by candlelight we eat the last "dinners" of eggs, applesauce, and cheese. Cathy heads for the tents, pitched down by the river, and Isidro starts to press plants. (Forgot: after bathing I walked/stumbled up a tiny cascade coming into the stream from the south, trying to catch some sort of frogs that have a squealing chorus every dawn and dusk around here in fast moving streams. Can't find them. My feet - the soles - are so tender I can barely walk on the river stones. At least two ringed kingfishers are flying up and down the river and squawking when we were bathing). The floor of the house is splattered w/ scattered cow shit, most of it old and crumbly. A breeze goes thru the rooms. We sit by two candles and talk of happiness, women, fear. Then slept 3/4 hours, pretty well.

23 January Next morning we're up at dawn and have a leisurely breakfast of tuna, cheese, granola, and coffee. While Isidro packs plants and cleans his face, I look around the back room of the house. On one wall is an outline drawing of a man in

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23 January (continued)

in a shirt w/ smiling face and upraised arms. Below in block scrawl is "Esta cama es de Jesús Arzozco, cuidado con ella." Isidro says that local lore has it that this Jesús hung himself, but Eladio says he knows Jesús' father and that this is pura paja. On another wall in blue pastel chalk is a good drawing of a large leaved tree, a mastodon (?), and a naked man w/ long hair and upraised spear aimed at the beast. On the front wall, outside, also in black scrawl, it says "La Isla de Los Hombres Solos." However, there was evidently a child here once too, because there are a small girl's sandle (dirty white) and the left arm of a doll lying in the cow shit in front of the house. The boards outside have the same rough gray texture and curious juxtaposition of the other campesino houses I've been in: they don't meet in straight, regular ways, but the whole thing comes together very nicely in a way I find really beautiful. We finally all load up and set out for base camp x0830 hours, Eladio in the lead, then me, Isidro last. I feel grumpy and clumsy and hot the first 20-30 minutes, and Isidro lagged the whole way back, for solitude I imagine. Weather good, trail better but still sloppy. We see very

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23 January (continued) fresh, very large Felis onca tracks between the little sandbar and base camp, and Cathy catches me a pretty little Ryto coniferus on that stretch too, lime green w/ red warts. We come in to camp ≈0935, for breakfast. Stiles, Gomez, and Rodriguez had gone way up the Peje; Gary hurt a wrist badly, and they brought me a big Leptophis depressirostris. Hartshorn, Antonio, and the two plant collectors came in late morning having made it up to 900m, gotten lost, gone E. to the Rio Guacimito and Finca Plastico! They brought me an Stelopus found on a log in good forest at 900m; a Xenodon rhabdocephalus from between the Rios Guacimo and Guacimitos, 540 m; and a baby Mastigodryas from the trail E. of camp and W. of the sandbar, 340m. The Leptophis gaped and defecated when handled, and the Mastigodryas squirmed and bit fiercely. The Xenodon was thought by everyone to be a Bothrops, and did a great behavioral imitation: tight coil, fast short strike w/open mouth, spread quadrates, finally spread a hood, and after repeated teasing it repeatedly tried to crawl away fast. Stiles and Gomez also brought me a dead juvenile Ameiva they stepped on, on a rock in the Rio Peje. George and Mike saw what must have been a

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23 January (continued) huge Spilotes day before yesterday, crossing the cassil that runs from the Rio Guacimo to the road we came in on. They said it gaped and flattened the neck vertically. The other two groups also had beautiful but hard trips: Stiles said the Peje is the prettiest river he's ever been on; [He also saw a turtle in the Peje w/ large, hooked beak and a bad smell - Kingsbury] Gomez said some of the times were among the most trying in his life. Hartshorn and I both thought of Matthiessen's Snow Leopard while we were hiking yesterday. During afternoon I dried my sleeping bag and tent, pickled herps, washed me and clothes in my little pool in the Cartarara. After dinner much talk, beer, rum, field notes. Isidro brought me a nice big ♀ Anolis biporcatus w/ a fairly fresh mating scar, found after dark between the cocina and outserts. Occasional showers after dark. (Forgot to mention that Hartshorn saw a Rhadinaea decorata as they went out on the 21st but didn't catch it; also a lime green Oleloplus at the spot he caught the other one).

24 January Everyone seems lazy, and we take group photo ≈10AM. Hartshorn & Stiles leave for San Jose, and I pack up all specimens to date, after lunch Eladio caught a Leptophis depressirostris along the road into camp. I walked up the cuts east of camp to cast a Felis onca track if any remain. Just as I

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24 January (continued) started up a slope after the first creek saw a big <u>Chironius grandisquamus</u> on the trail. This was a few minutes after I'd barely glimpsed the tail of a slender brown and/or green snake go off the trail into grass, so I was surprised it didn't move as I dashed ≈2m and seized its posterior. The snake's tail was still in bushes to the right of the trail, head pointed up trail, as if it had crawled out and then turned. When I grabbed the snake it turn, inflated, drew back into an exaggerated S-coil and struck. Also smushed, and managed to bite my hand once. Looks a little different than the two I tracked at La Selva, perhaps because of size or geographic variation. This one has regular coffee bands alternating w/ black, much more obvious ventrolaterally. Viewed from above, the snake is almost jet shiny black. Ventrally, esp. on the posterior ≈½ and on the tail, these light bands are almost rose colored. At 1400 I reach a good jaguar track, start casting it, then have to return for more paraffin. Finally do it the Koford way: took >30 minutes, ½ of a small can of Sterno (jellied alcohol), and quite a lot of paraffin. Saw nothing else on the trail, and the others didn't when they went up to the falls either. Much merriment during and after dinner. I couldn't sleep and eventually got

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24 January (continued) up and walked to the Quebrada Cantarana and back – no frogs. Then walked in grassy area E of our tents. ≈2245h found a Leptodactylus pentadactylus in a 6" diameter hole in a 1m long, 1m diameter log. Then a Smilisca on top a nearby log.

25 January Everyone woke up ≈6AM, anxious about packing and leaving. Had breakfast, then Erik the cook packed everything up, so for lunch we had only granola. One Land Cruiser came in ≈1330 and took a loading gear out to the tractor and trailer at the Rio Peje, then returned for us and our packs ≈1500. Road better than when we came in, but still very rough. Reached La Virgen ≈1730, had a cold beer, called La Selva, and waited 'til ≈1930 when Victor picked me up. Finally carried my ~~[illegible]~~ pack across the new bridge a little after 2000h, walked up to the new lab and ran into John Endler!

26 January Finca La Selva, near Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

Heard after breakfast that Edwin Paniagua saw a Felis concolor early this AM on the little bridge over the west boundary trail, just off the Camino Experimental. Went out to try to cast tracks, and saw a ♀ agouti w/young and many Ameiva. Spent the day getting cleaned up, settled in etc.

1983

27 January ≈0930 hr I was in my room and heard Rob Colwell call "coral snake." He found a small Micrurus nigrocinctus (stomach empty, photos) crawling across the sidewalk in front of the bathrooms. It thrashed, body flattened, tail displayed, and bit friendly and repeatedly when pinned. After lunch walked to ≈1800 m on the Sabalo Esquina trail to check the stump for Bothrops asper, but saw only many Ameiva.

28 January ≈0900 Orlando brought me an Amastridium found crawling on the other side of the bridge on the way to the AC labs. Rained from midmorning 'til ≈1530 hr. This AM Orlando also showed me an Agalychnis callidryas sleeping on a leaf ≈2.5 m above the sidewalk, just behind the showers. I photographed it, then gently took down the leaf and taped it to my shelf w/out it waking up.

29 January Up for breakfast, then napped and read. From 1315-1500 hr walked W. to back side of old cacao grove, back w/ a detour in Plot I, over to Arboretum and back. At 1401 got a Mastigodryas melanolomus crawling on trail at ≈ SOC 900. It squirmed and bit repeatedly when seized. Saw a Nasua ≈ SUSA 250 at 1446 hr. Leda brought me a small Rhinoclemmys which she found in the successional plots this morning.

1983

29 January (continued) At 1520 a woman bird watcher called me to see a big shiny black snake, but I couldn't find it - bottom of stairs below showers.

30 January Worked in lab and library all day, except for a two hour trip into Puerto Viejo w/ Mo Donnelly for ice cream.

31 January Rob Colwell brought me an amastridium he found ≈0845 at SOC 500, sitting on the trail. When they pinned it the snake thrashed its tail, then coiled the tail around their net pole and could be lifted off the ground. When I examined it the snake crawled rapidly and voided a smelly clear liquid.

1 February Examined stomachs of the snakes Craig Guyer and Maureen Donnelly have preserved for J. M. Savages CRE collection:

CRE 6698 - Micrurus nigrocinctus (this is the one that bit Craig)

SV≈550, tail 109 ♂ somewhat shriveled (killed in boiling H_2O

SC 1 Sepidophyma flavimaculatum HF HW 14 SV≈90 mm

Went out at 2200 h w/ Craig Guyer, Mo Donnelly, and Kay Etheridge to a swamp on the Camino Experimental. Many transforming Hyla elaeochroa; a large, solid brown Rana palmipes sitting in a small pool; and a very large, aggressive red spider.

1983

2 February At lunch Ned Fetcher told me of seeing a *Lachesis muta* and scat of *Felis orca*, so after lunch several of us went after them. Walked out the Camino Circular Circano to the Camino Central, all the way across the Sendero El Swampo, and N. on Holdudge Trail to its origin, w/out finding either. Did see clear *F. orca* tracks in mud near water in the swamp. Found the scat at Holdudge 500, and the *Lachesis* at Sendero El Swampo 750, in both cases right at the signs. The scat was in midtrail, and had many bugs; no associated tracks. The snake was 4-5 m south of the trail, against a log parallel to the trail. Two logs intersected this one from upslope from the trail, so that the snake was in a "box canyon" of logs. This is in good, fairly open forest, among palms ½ m high. Snake was opaque, and in a slightly longitudinal resting coil, w/ head on one end. After several minutes of photos, it moved its head slightly. When I dribbled some red paint on its neck from a jar tied to a pole, it assumed a more erect, striking pose and moved its head slightly in my direction. Impression was that it was alert and prepared to be defensive, but not aggressive. We left it

1983

2 February (continued) ≈1515 h, still in an alert posture. At about 925 m on the Camino Circular Tejero found another Felis onca scat, this one including dropping plus wads of hair and scattered teeth, all evidently of Tayassu. Went for swim at the waterfall on the way back in, first time this trip. Forgot to mention that when the Lachesis assumed what seemed to be a threatening posture, it flattened (inflated?) the anterior 30-40 cm laterally. A similar lateral flattening is evident in a photo on the dining room bulletin board of this species.

3 February Left ≈0800 h w/ Teda Muñoz, station manager. Went to 750 m on Sendero El Swamp by way of the Far Loop Trail. Found Lachesis muta from yesterday, ≈2 m from original site, coiled under the more W. of two logs perpendicular to trail. In an oblong coil w/ head resting on one apex - took one picture and didn't disturb it. Saw no new Felis onca tracks in swamp. Went northward on Holdridge Trail then over to Sabalo Esquina Trail and out to ≈1750 m on it to the Terciopelo stump. Saw no snakes, but several juvenile Eleutherodactylus bipocatus, one E. minus, and one E. fitzingeri, all active on trail or adjacent litter. This was a warm, sunny morning. After lunch, I went w/ Robin Chazdon (Cornell U.)

1983

3 February (continued) out the Camino Experimental to see a hummingbird, Florisuga mellivora (White-necked Jacobin), on a nest on a short palm beside the trail. Took photos. This was same species, the ♂ of which we saw this morning just below the waterfall on the Quebrada El Salto. Robin and Rob Colwell went back to the station, and I walked til ≈1500. Went out to ≈100m on the West Boundary Trail, then returned and completed the loop of the Camino Experimental, then out to the arboretum and back. Saw nothing but Ameiva.

4 February Left by myself at 0730 hr, walked by way of Far Loop Trail to Lachesis site at 750m on the Sendero El Swampo. Snake not in sight and I looked all over the slope w/out finding it - a little creepy! Next walked to 700m on the Camino Central, found the bridge out, and returned via Sendero El Swampo and Holdridge Trails. No fresh jaguar tracks in swamp. Near the bridge just before leaving swamp, was heckled by 4-6 White faced monkeys. Saw a squirrel too. Went to Puerto Viejo after lunch for kerosene. Forest has seemed extremely dry, except for swamp, but we had some brief showers today.

5 February Left w/ Leda Muñoz at ≈0900. Went by way of Camino Circular, Tejaro to the Camino Central and then to 750m on the Sendero El Swampo. Looked all over slope and among logs, but couldn't find the Lachesis.

1983

5 February (continued) Caught a gravid ♀ Norops capito on one of the logs, took photos of her. No new Felis onca tracks on the Swamp Trail. Went out to ≈1000 m on Holdridge Trail, then back to station just before noon. Bird group here saw no snakes today either. at 2140 hr a bird watcher came and told me he watched a black and orange "coral snake" cross the sidewalk, supposedly w/a fairly blunt tail like Micrurus mipartitus.

6 February Saw Rob Colwell off. Left by myself ≈0900 for the Lachesis sight by way of the Camino Circular Lejano. No snake, no Felis onca tracks in swamp [NB: the old tracks were going east on trail.] Took a short cut between the Successional Plot to the Sabalo Esquina Trail, then out to 2000 m. Check the Bothrops stump - nothing. Saw two large Rhinoclemmys basking on a large log in sun, over the creek. Too wary for pictures. Returned to station ≈1115 hr. One of the binders had seen a little Leptophis, "large green head w/tan body; one a black snake ≈0.5 m long w/ longitudinal yellow stripes. At lunch Fernando told me of finding several scats on a trail just inside the new property, so from 1300 - 1430 we walked out the Camino Experimental across the bridge at LOC 50 and ≈200-300 m down the trail onto the Vargas Tract.

1983

6 February (continued) Just E. of the bridge at LOC 50 there was a smelly fresh scat ≈6" long and fairly amorphous beside the trail; contained hair (HWG 1341). Farther on found three sets of cat (Felis onca I think, but maybe F. concolor – this is very near where one was seen last month) scat. The first dry large and well formed (HWG 1342), second a little messier (HWG 1343), the last consisting of three adjacent piles (HWG 1344). Just past the last one was a small amorphous pile up on a log ≈0.4 m high, containing seeds (HWG 1345). All the cat scats had characteristic ball-and-socket features and were on the trail in plain sight. The one on the log looked like procyonid or didelphid. Found several tracks in mud between the ~~first~~ second and third set of cat scats. At least two were of large cat, but couldn't be sure if onca or concolor. At least 4 others had clean claw marks and were much smaller – Eira barbara? Fernando (works for the clarks) also showed me a bend on the Camino Experimental where he saw a Lachesis – he heard it move and saw it in an aroused posture.

7 February Left at 1300 for Hartshorn Trail. At 1345 hr, ≈200 m on SOR, missed a pretty dark snake w/ gold stripes, ≤2' long. It was dashing off the trail

1983

7 February (continued) when I first saw it, and disappeared in ground cover before I could catch it. Rhadinaea guentheri? Went to ≈300 m on Hartshorn Trail (via Camino Circular Tejano) to where Doug Levey (U. Wisconsin) had flagged some scat – very black and granular and not recognizable to me, so not saved. Next checked Lachesis sight and walked through swamp, then back by Holdridge Trail. Rodolfo Peralta brought me a beautiful green Bothrops schlegeli he found in Plot III. The snake was in a tangle of vines and a palm, Cryosophila albida, about 1.7 m above the ground. He was cutting through the forest, and when he chopped the vine the snake fell to the ground. Luis Fernando Corrales saw a large Chironius near the bridge at ≈LOC 50, but no new cat scats on the Vargas Property trail. Victor brought a young Agouti paca that Sharon Hesman (U. Wisconsin) is caring for. The animal doesn't bite, but has an astoundingly loud and ferocious sounding growl! Late in the evening Sharon was walking across the bridge over the Sura on her way to the AC lab, and saw a Felis yagouaroundi stalking a Proechimys at the end of the bridge.

1983

8 February Spent much of the day sleeping and reading. Late morning went to 260m on the East River Trail and collected a pile of hair, skin w/ scales, and bones that appears to be the remains of a largely eaten armadillo. Then to the arboretum where I photographed the remains (feathers only) of a Trogon clathratus on the end of a large log. Doug Levey saw a falcon, Micrastur sp. fly up from the log early this morning, and we surmise it was the predator. After lunch, went to Puerto Viejo for ice cream, and write in front of the Bar Monte Verde was a huge (≥50 cm TL, very stout) Leptodeira annulata dead at the roadside. It was rotten w/ a very smashed head, apparently killed by a rock. Ground color had a distinct reddish-brown cast.

9 February Spent the morning bird watching, reading, and writing from the balcony outside my room. After lunch went to the arboretum to photograph the Bothrops schlegeli and a pair of Eleutherodactylus talamancae that Doug Levey caught on the central trail a few days ago. Large yolked eggs are visible through the ♀'s body wall, and the pair were in inguinal amplexus when found. On the way Doug caught a ♀ Anolis capito near the base of the steps

1983

9 February (continued) on the shortcut trail between Sendero Sura to the arboretum (≈1310hr) and the AC lab. Says he's seen this lizard there before. When she opened her mouth to bite we could see a large green and yellow caterpillar w/ urticating (?) hairs, that Sharon Herman identifies as .
The prey weighs 1.01 g; the lizard 9.35g and is to be released after toe clipping (stomach item saved as HWG 1347). Clipped outside right front toe. SV81, tail 122 mm, HW 12 mm. Walking back, just as we crossed the Sura bridge, almost to the washroom, a large Coryto phanes cristatus crossed from N. to S. among us and Doug grabbed it. It inflated and gaped.
SV117, tail 235mm, 46 g.

10 February Left at 0795hr walked out Camino Experimental and into Vargas Tract by way of LOC and then the E-W trail. Saw Sphenomorphus and Ameiva, plus a group of 6+ Cebus just S. of the stairs near the end of CES. Walked until I reached a "no hunting" sign on a N-S trucha, then turned N and stopped at the Rio Sarapiqui. On the way back got a large scat (Felis onca ?) HWG 1348 ≈10 m beyond where I got the farthest out scats last week. This one was at least several days old. Returned to station for a drink, then took the N. capito out of the Sura Trail and released it. Walked to far end

1983

10 February (continued) of the Arboretum, then back to station. Left ≈ 1300 hr w/ Brian , a British M.D. & nature photographer. At 1320 hr, ≈ 290 m on the East Rive Road, saw a greenish snake going off the trail into forest and managed to grab a ≈ 1 m Pseustes poecilonotus. W/ considerable squeezing and poking it formed an S-coil, gaped, and inflated anterior part of body, and then struck. Would not sustain the threat display more than 1-2 seconds after each teasing, but instead tried to crawl away wherever possible. Went to ≈ 300 m on Hartshorn Trail via CCL - released Bothrops schlegeli (SV 495 mm, tail 93 mm, 36 g) on a vine and photographed it. Walked across the Sendero El Swampo, over to the Sabalo Esquina Trail, and out it to the tercopelo stump at 1750 m - no Bothrops asper. Cloudy and saw no Rhinoclemmys on the logs over the creek. At 1532 hr, SOR 640 m, saw a Dendrophidion vinitor go off the trail fast and into a ditch and grabbed it. Beautiful snake! Coppery head, yellow belly. Inflated, S-coil, then bite and hold on, chewing and inbedding posterior teeth.

11 February Doug Jervey brought me a Rhadinaea decorata,

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11 February (continued) found about 0930h at CCC 650m. Fernando Corrales saw a deer on the Vargas Tract that lacked horns, lacked spots, and had a white tail — he called it a venado (white tail deer) and the description fits Odocoileus. Jaime told me to watch for Canis familiaris in the Felis onca scats from the new property, because someone in that area lost a dog recently. Went around the Camino Experimental w/ Fernando to get a Felis onca scat Orlando showed him, at CEN 292 m (we came from CES). Orlando spotted it ≈2 weeks ago as a fresh, obvious scat; now it is just packed down in the trail as hair and a couple of claws — obviously of a sloth. At 1100h, 245m on CEN, we caught a strange Nonops, cf. lemurinus, ≈1.8 m up on a small tree. After lunch, went into town by truck w/ Doug Jervey for ice cream, beer, and mail. Walked back. Saw an osprey at the Rio Sarapiquí and two Amazon Kingfishers. About ½ way down the road between the highway and the La Selva turnoff, saw a Bat Falcon land in a tree. Downhill from the La Selva turnoff, we watched a Crane Hawk for ≈15 minutes. It landed in three different trees and seemed to search for food in each one, hopping and or flying from place to place w/in

1983

11 February (continued) a tree. In one tree, which had ocopendolas, it seemed to be using its feet to investigate something; this was accompanied by wing flapping, so it might have just been using its feet to gain purchase. In the second tree we saw it investigate several bromeliads by peering into them w/ its small head. The third tree was a tall thick snag w/ several (nest?) holes. The Crane Hawk held the trunk w/ its talons and stuck its head into each hole several times, checked out a bromeliad on the same trunk, then flew ≈100 m away and landed in a tree where we could no longer observe it. Returned across bridge at ≈1545 hr. When we went N. at ≈1230 hr, there was a ≥1.5 m Caiman on driftwood in the Rio, and it was still there when we returned.

12 February Left ≈0715 hr w/ student from Texas A&M (Tinlla ?) and made a loop: CCL to SVA, checked for Lachesis (not there) and Felis onca tracks (none), returned by Holdridge and East River Road. Saw Spenomorphus, Eleutherodactylus, and Rana warscewitschi active in litter, and a Violaceous Trogon on a limb. As returned David Clark directed me to a small Boa constrictor in the eaves, just under tin roof, of the shop

1983

12 February (continued) building near the bridge. It crawled, assumed S-coil, and struck once. Went out on bridge but couldn't see Caiman on the drift pile where it was yesterday. Rained at least 2 hours beginning ≈1400h, and off and on in the evening. At ≈2215h walked to CES 400 w/ Craig Guyer, Doug Levey, and Brian from Britain; light rain part of the time. Saw Eleutherodactylus talamancae and E. diastema calling on leaves ≤1 m above forest floor; an E. biporcatus adult (SV ≈ 75mm, photos) and several juveniles on the forest floor; and heard a Crested Owl several times.

13 February Photographed Dendrobates pumilio w/ tad on back, and Squirrel Cuckoos from balcony. Doug Levey brought in a Norops humilis that weighed 0.95g and was found holding a big tabanid fly (?) weighing 0.14 g. Anole ♂ measured 35+54mm HW 6mm. Orlando brought me a baby Leptodeira septentrionalis that fell out of a shrub or low tree in the Arboretum: it has a bright white blotch on the head. At 2200 Maureen Donnelly saw a Felis onca on the sidewalk just east of the Sura bridge.

20 February Haven't written field notes for a while. On 14 February I found a small adult Leptodeira septentrionalis stretched out on a large fern,

1983

20 February (continued) along the Laboratory sidewalk, just west of the Sura Bridge; a light rain was falling. It squirmed and splashed me w/ something foul smelling out of the cloaca. On 15 February Vicky showed me a fresh Felis onca scat at 902 m on the CCL - it was apparently not there when she first walked the trail at dawn, but was there later in the morning. I went to the Clarks' house for wine, and while there a ≈3.5' Bothrops asper was twice seen crossing the sidewalk steps near the Old AC Lab. About ≈2300 I developed an awful migraine headache that kept me up most of the night and lasted 'til late the afternoon of the 16th. About 1950 hr that night David Thompson showed me an adult Oxybelus petola near the Old AC Lab - it squirmed and crawled fast, but never bit. On 17 Feb I walked CCL, CC, Sendero El Suampo and back on Holdridge. Found a Felis onca scat at 325 m on Holdridge Trail at 1020 hr; damp, solid, and seemingly consisting solely of sloth hair - has "ball & socket" shape. At 1042 hr found a gravid ♀ Rhadinaea decorata crawling across the SOR at 145 m. It squirmed and cloacal discharged. Walked to Arboretum and back, and at the jct

1983

20 February (continued) of Sura Trail w/ the AC Jab Shortcut trail saw a Cebus and Ateles swinging around overhead and near each other. They were knocking leaves and branches down, and precisely below them I found three medium size reptile eggs. Went into town after lunch on the 18th and walked back hoping to see hawks, but didn't. On the 19th, ≈0800, spotted an Oxybelis aeneus coiled loosely ≈1.8m above ground on a tall plant at W. end of the old Annex – it squirmed, discharged, inflated gaped, and struck slowly when handled. Floated from Rafael's House to Station stairs in the Rio Puerto Viejo ≈1530 - 1600 hr. Saw no harpy, but a vulture rose from an area of woods where there was a foul smell. At ≈2300 John Cooke brought me a beautiful big Pliocercus euryzonus found crawling across the sidewalk steps near the old AC Jab. It thrashed, wrapped tail around my hand, and discharged. Then this AM when I had it out for pictures it did more of all that plus struck several times.

1983

21-25 February Spent this time in San Jose, Costa Rica. Went to zoo (photographed white lipped peccaries), Museo Nacional, and got export permit.

26 February Parque Nacional Santa Rosa, Provincia Guanacaste, Costa Rica
Arrived here after dark. Some rain on the way, but ground dry and hard in the campground – slept under an almost full moon. Awaked at various times by armadillo visits, two park guard horses coming to eat out of nearby garbage can, and (≈3:30 AM) something that stung me hard (maybe a velvet "ant").

27 February Before 0800 hr watched 2 ♂♂, a ♀, and 2+ juveniles of Gonatodes albogularis moving over ≈2 m vertical stretch of trunk of a large tree ≈5 m away. Males sit w/ heads up (yellow color very prominent) and sometimes wiggle the erected tail tip, which is lighter than the rest. Saw one approach another ♂, which fled ≥1 m fast when 1st was ≥.3 m away. These lizards moved in and out of cracks, and were not visible an hour or so later when the sun was hotter. Saw one ♂ Norops cupreus display near the geckos from a hole on the trunk ≈1.7 m off the ground, then a few minutes later chase a ♀ Gonatodes. Had coffee w/ Dan Janzen and Winnie Hallwachs at their house. He gave us directions to Rincon de la Vieja and a quick walk through a plot of "evergreen" forest where he most often sees Crotalus durissus – says this forest is

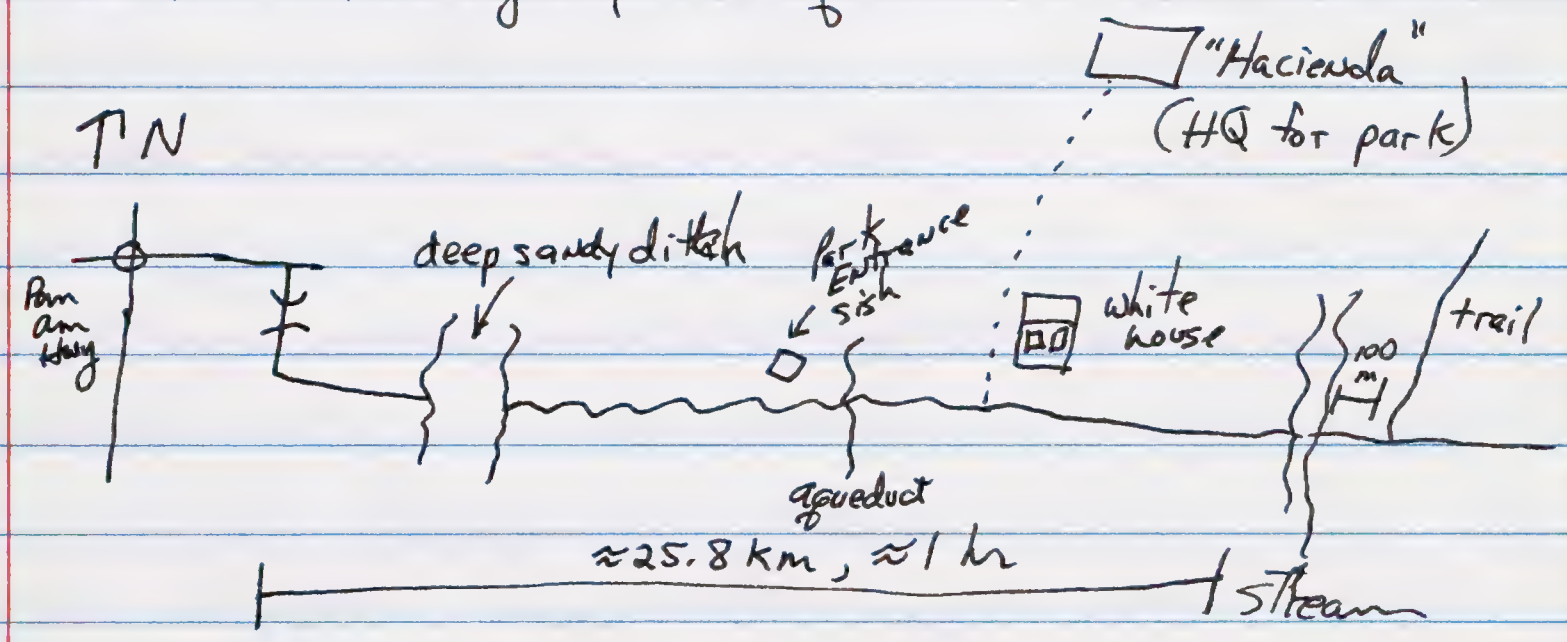
1983

27 February (continued)

elict but once maybe widespread in Guanacaste. He regards that snake as very mild mannered until heavily teased or handled. Driving out we saw several big *Ctenosaura* on the road and on rock piles, and a DOR *Conophis* sp. in grassy part just W. of the park entrance.

Parque Nacional Rincon de la Vieja, Prov. Guanacaste, Costa Rica

Getting here is tricky; and one begins at a bridge on the main road going east of Liberia.



We stopped to cool off at the aqueduct that crosses the road a short distance into the park. Saw a large, fast, brown snake disappear into a tangle at roadside, and a *Buteo magnirostris* fly to a large tree and perch. Crossed the stream w/ no trouble (rental Toyota sedan), parked off the road where a trail goes ≈N (I think), ≈100 m past the stream. Packed up to a clearing a few hundred m into the forest where there is an abandoned outhouse,

1983

27 February (continued) then further up and into some nice forest on a very narrow trail. Trail reaches a dry aqueduct (?) ditch, then turns right and parallels it around the slope, climbing slightly and eventually reaching a stone dam and simple spillway gate. Found two Norops lionotus trapped in the spillway outlet, trying to swim upstream but unable to climb the sides when they paused. One ♂ caught was a beautiful male, released upstream. By now ≈1700 hr, so we made camp upstream ≈150-200 m, had dinner, and enjoyed the night. Raining ff and on, but no frogs calling and no Atelopus seen by day.

28 February Broke camp and explored some. At 0909 hr found an Erythrobamon bizonus crawling in sun dappled leaf litter a few meters into the forest from the stream. Snake ≈40 cm TL. Beth saw it, and I grabbed tail as it dived into leaves. Thrashed and cloacal discharged, but didn't bite. Heard howler monkeys. Walked uphill on a ridge right of the stream (looking upstream), then walked back to car. It had been broken into: food gone and battery dead. Passerbys helped push and we started it. Lunch in Liberia, back in San Jose ≈1730 hr. Dinner w/ Manuel Santana.

1983

1 March — Finca La Selva, Provencia Heredia, Costa Rica
Reached here ≈1430 hr, raining since ≈ Cariari on the road in. Craig Guyer had found a *Gymnophis* crossing the trail in the rain.

2 March — Still raining, tho more or less stopped by midafternoon and started again ≈2130 hr. At 1300 hr went w/ Debbie Clark to 500 CES, where she saw a *Lachesis muta* on 27 February. It was an adult, coiled under a small (>1m high) palm in fairly open, primary forest. Snake not there and I couldn't find it. Walked back, then out CCL to CC and out the Swamp trail to old *Lachesis* sight, but didn't see it. Got back ≈1445 and learned Debbie saw a big *Lachesis* ≈1 hr earlier at CES 300m — she heard it "raise up" beside the trail after she walked by, after which it seemed to have crawled off — she, Doug Levey, and I could not find it.

3 March — Today Craig Guyer found a very small *Pleocerus* (2.43g,) in litter at a tree base in one of his study plots. It disgorged a gravid ♀ *Eleutherodactylus transfordii*, SV 23mm, head width 9mm, 1.2g. Thrashes and slight tail curling when handled. Colors more or less identical to the large adult week before last.

1983

4 March | at 0645hr an OTS student showed me an adult Bothrops schlegeli crossing the sidewalk just NW of the bridge over the Suza. It is a green phase, and snapped it's mouth widely open and shut when I picked it up. We've had heavy rains and wind the past two days, w/ small trees and large vines down in some parts of the forest, so I wonder if that brought this snake to the ground? From 0900 - 1200 I walked out Holdridge to 750m, E to Sabalo - Esquina Trail and out it to ≈2100m to get a piece of equipment the Clarks left. Nothing in the Bothrops asper strings. Back to the station, then out CES to LOC and ≈300m out the atajo into the new property. Only thing seen were Cebus monkeys at the LOC x CES junction. at 1400hr it is sunny and partly cloudy.

5 March | Worked in station all day.

6 March

Freere, H.
1983

17 June Finca La Selva, Puerto Viejo de Sarapiquí, Provencia Heredia, Costa Rica

Arrived here ≈0800 hours. Left Berkeley 0600 on the 15th, spent that night in Miami and boarded 0600 flight to San Jose the next morning. Beautiful sunrise over the Caribbean, then spectacular view out window into smoking Volcan Poas. Spent day shopping in San Jose, then caught an OTS supply run at 0345 to here! Settled in. After lunch Milton Liebesman took me to ≈450 m on Camino Experimental, then ≈150 m to the right into the forest. Yesterday he found a large freshly killed armadillo w/ head and viscera eaten and flies loudly on it. We looked around the site he remembered, w/out finding it. Then I walked ≈10 m away and found the carapace and tail of a large Dasypus which he said was it. Took photos.

18 June After lunch went w/ George Schaltz (U. Wisconsin) and Helen Young (Stony Brook) to ~~[illegible]~~ 1435 m on the Central Trail to collect a felid scat he found fresh yesterday. On the way, 1350 m and 1445 hr we found a pretty frog sitting in litter beside the trail that Gary Gruber later identified as Eleutherodactylus noblei. Also saw a E. biporcatus juvenile active in the litter.

19 June Left by myself at 0750 to visit E. Parniagua's

Greene, H.
1983

19 June (continued) finca just S. of La Selva. Went by way of Near Loop, Southwest Loop, and West Boundary trails. Saw guans or Curassows. at 0925h found a large ♂ Pseustes poecilonotus lying still in the sun across a cow path on the finca (trees all around on finca, and forest edge <50m away. Met Manuel Santana at ≈1030, had snack and coffee, then walked ≈20 minutes S. into forest to see where he has a 3m long Boa constrictor telemetered. Got chased by a bull twice, coming to and from the forest through the finca — it stopped each time when we climbed up on high stumps. Left at 1345h and walked back alone by way of Sendero Jaguar and the Atajo on the new property, stopping for a swim in the Rio Sarapiquí. On a rock beside the rio found scattered crustacean parts, including two apparent tusks ≈ 1cm in diameter full of nothing but such parts — I presume these to be of Lutra longicaudis. Returned to station ≈1530hr, where D. Leavey (U. Wisconsin) told me he and Rafael Campos found an adult Pliocercus eating a frog [Eleutherodactylus minutus] at 0945hr, head first. Frog was alive when regurgitated and at noon but dead at 1530hr and quite smelly

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19 June (continued) by after dinner. [Tired tonight!] Caught a second adult Pseustes, ♀, as it crawled off the Sendero Jaguar in deep forest, not too far from the SW boundary of the original La Selva property. Both Pseustes were fierce, inflating and biting.

20 June at 0613 hr I grabbed a ≈1.5 m Clelia clelia as it crawled off the sidewalk behind the bath house. It thrashed and constricted my arm, but didn't bite. After lunch walked West River Road and back w/out seeing anything.

21 June Put transmitter in ≈99 cm Lachesis muta, a fairly tranquil snake.

22 June Released Lachesis ≈0930 hr and watched periodically throughout day and evening. Some light rain in late afternoon, and enormous racket of birds at dusk. ≈1845 hr watched and photographed a Caluromys derbianus in a Piper plant behind the bath house, hanging w/ tail and eating leaves. Beautiful orange and cream fur.

24 June Lachesis still in place this AM. Checked periodically throughout day, last time ≈2130 hr. Some rain in early afternoon. One Hyla elaeochroa seen on leaf at night, and several Eleutherodactylus heard calling at night – 1st sign of frog activity, and it's been very dry here. [Forgot to write notes

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24 June (continued) for 23 June - checked Lachesis periodically throughout day and evening. Caught an adult Sibon nebulata on steps below the station after dark. It expelled foul stuff from cloaca and thrashed. Late this afternoon Manuel Santana brought in the 3m Boa constrictor he's been tracking in forest near Edwin Paniagua's finca. She was in a huge tree root, and is opaque.

25 June Checked little telemetered Lachesis at 0540 h. At 0632 hr Edwin Paniagua led us to a 2 m + Lachesis muta ≈50 m from the Bath House, in the Ecological Reserve. It was coming on to the shortcut trail and bumped his boot (not struck), then turned SE and crawled slowly back into the forest. When we approached it was stretched out immobile, and while ≈10 people stood around and took photos, the only movements were a flinch or two in the neck region when a flash went off. Returned ≈0715 and it was ≈20 m SW of that place, crawling slowly. Stopped when we approached. Then Pat Fogden and I watched it stretched behind a tree from ≈30 m away while Michael went for his camera. Suddenly it had disappeared, so we circled to the tree and past it, then each searched around nearby large buttressed trees. We were amazed it had moved off

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25 June (continued) far enough we couldn't find it so fast. When Michael arrived he almost immediately saw it coiled in front of the tree where it had been crawling. We had walked w/in inches of it w/out seeing or arousing it! Next we took numerous photos, and only response of the snake was to turn its head slightly in our direction and tongue flick fast once or twice. No long slow flicks. Snake was the prettiest of the three adults I've seen thus far — apparently freshly shed. Very cryptic, either stretched out or coiled. After lunch, Nancy Rozzo, student from U. Wisconsin, brought in a Rana warszewitschii that she found at ≈600 on Camino Experimental Sur. It had swallowed all but the tail of a Norops humilis, which when regurgitated seems OK. Norops wt. 0.81 g, SV 29 mm, HW 5.5 mm, tail 33 mm. Rana wt. 12.73 g, SV 56 mm, HW 19.5 mm. She also saw an adult ♂ Felis concolor on the Alajo in the new property this morning.

25 June Up ≈0530h and out to check the little Lachesis on the Camino Experimental. As I returned up steps behind the Bath House Craig and Mo told me to slow down, the big Lachesis was crawling up to the sidewalk there. They heard it more it's arrival then saw it. We watched it of

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25 June (continued)

and on for over an hour. At one point I timed the head as moving ≈1 m in 20 seconds of slow rectilinear crawl. This was always the predominant mode of locomotion, even when it stretched out completely on a fallen log, except when it ascended over low limbs and once a fallen 55 gal drum. Occasionally if we moved nearby it stopped and turned it's head toward the movement. Twice I poked it's tail firmly w/ a twig, and it produced a loud noise by vibrating the tail. Saw frequent volleys of tongue flicks, but never long, ~~the~~ slow ones. ≈0730hs, just as the Lachesis disappeared in vegetation N. of the boardwalk at forest edge behind the kitchen, Isidro Chacón called me to see a Tamandua foraging in litter and low limbs at the forest edge. Uniform reddish brown w/ a black saddle. Oblivious to me unless I moved or used camera flash. At one point it went ≈5 m up a small tree quickly, then descended to a 3 cm diameter vine and deftly moved horizontally several meters. Tail used frequently. Once it fell from several meters up, but caught a vine w/ one hind foot and the tail ≈ ½ down

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25 June (continued)

and then descended w/out problems. ≈0800 hr Isidro returned to lead me to a *Bradypus griseus*. The sloth was curled up under a low shrub by the path to Rafael's house, where it meets East River Rd. Big flies in its fur, so I thought it dead - but touched it w/ my boot and it wheeled around. Seems OK. Little *Lachesis* was in same spot ≈1030 hr, but at ≈1300 had moved ≈10 m N and recoiled. An obvious crate where it has sat for last few days. Went to a new tree fall at ≈360 m on the Camino Experimental Sur - took photos and saw several *Cebus* monkeys. This morning when we watched the big *Lachesis* crawling behind the Bath House I noted two landmarks on the ground, and later found the distance between them to be 2.1 m.

26 June

Checked small *Lachesis* off and on all day. Went for float in the Rio Puerto Viejo before lunch and the Rio Sarapiquí after lunch. In late morning, Manuel went up on the canopy platform and saw an adult *Pseustes* up there (≈40 m above ground). At ≈1845 (after dark) caught a ≈65 cm *Micrurus nigrocinctus* crawling in leaf litter beside sidewalk behind Bath House. It thrashed, tail displayed, and snapped repeatedly when pinned. Rained off and on all night. Frogs calling here and there, and I spotted

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26 June (continued) an adult ♂ Smilisca baudini on a twig ≈2 m up. Michael Fozder found a Nothopsis rugosus crossing a trail in the dark. When handled, it alternates thrashing and becoming rigid. One cloacal discharge of clear liquid, of which I could detect no odor.

27 June Watched Lachesis off and on throughout day and evening. Rained most of day and into the night, sometimes very hard, and there was a tremendous wind storm ≈1700 hr. Later I noticed many limbs and bromeliads down in the forest. When I checked the Lachesis at night it's neck was in an S-coil and head was up—"alert." Perhaps coincidentally, as I reached the place on the CES trail to turn into the forest, some rat-sized rodent crossed the trail. Only other time I saw the Lachesis seem alert was on a rainy night when I also flushed a rodent on a log very near it.

28 June Checked Lachesis throughout day. After lunch walked around the arboretum, and at 1404 hr on the shortcut from the Suza Trail just inside forest from the Lab Clearing I spied a Tomodon sabdocephalus crawling rapidly off the trail. I thought it was a Bothrops asper and nearly lost it in a tree hole before, on the third stab, I pinned it,

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28 June (continued) got a good look, and recognized it. Once pinned, it thrashed, struck forcefully w/ open mouth, and tried to impale me w/ the large rear teeth when held.

2 July For past several days have worked in lab and checked small Lachesis many times. ≈0800h this morning George Schaty (U. Wisconsin, Botany) and Doug Levey (U. Wisconsin, Zoology) saw a Lachesis at ≈600 and 550 m, respectively, on the C.C.C. trail. Snake lunged from trail-side at George, and was crawling up the trail when Doug encountered it (?) a few minutes later. When we arrived, the snake was in a tight round coil w/ head in center and down, ≈1 m off trail in leaves. Hard to see, tho exposed. When I touched it w/ a potato rake it jerkily flopped out of the coil and started into forest. I hooked it out onto trail and after ≈5 minutes of maneuvering, we got it into a ≈10 gal garbage can. Still wouldn't call it an aggressive snake.

3 July Big event of today was putting a radio in the Lachesis after lunch. It measured ≈1.7 m total length, weighed 1.6 g, ♂. Took ≈5 minutes to do everything w/ me holding the head, Craig Guyer

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3 July (continued) the body. McDonnelly marked and measured, and Manuel Santana inserted the transmitter.

4 July Released the Lachesis after breakfast. It eventually crawled under a fallen Welfia leaf, against a huge fallen tree. This is ≈20m off the trail at ≈620 m on CCC. Was inactive there all day. When we checked it after dark (≈2030hr), it had head out over outer loop, facing the log, which is ≈.3-.4 m away — good position to catch anything traveling along the log.

5 July at ≈0630 Nancy Rogge (U. Wisconsin) saw a Lachesis crossing the boardwalk at ≈400 m on the CES trail. When we arrived ≈0645, the snake was coiled around the knapsack she left to mark the place. When I touched it w/ hook the snake turned w/ head drawn back and vibrated tail, but didn't otherwise seem threatening. No problems getting it into a plastic garbage can. Just before we got to it, caught a little (≈.3-.4m) Spilotes resting on a tree buttress beside the trail. At 0803 hr, as Manuel and I went to see the Lachesis on CCC, I saw a Dendrophidion vinitor crawling fast in leaves where E. River Rd. meets CCC. Snake

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5 July (continued) inflated anterior immediately after I grabbed tail. Struck repeatedly and thrashed. Regurgitated 2 Eleutherodactylus bransfordii. One was fresh, 0.71g, SV 19mm, headwidth 7mm. Other swallowed tail first, somewhat digested (head and part of trunk remain), head width 10mm, wt. 0.74 so real wt. ≤ 2g.

6 July Continuing to check all three Lachesis several times each day. Having some heavy rains w/ long thunder peals - up to 28 seconds or more. Tonight went out to 600 m on the Near Loop Trail w/ Donnelly and Guyer. I found an Agalychnis saltator ≈ 3m above ground on a Welfia palm, and we watched one or more dingos, Bassaricyon gabbii high in the canopy. Looked up when we heard noises in leaves overhead and got a very localized shower from the animal(s) shaking standing water on us. Very Potos-like, but tail held straight out and fast, squirrel-like running and leaping from branch to branch.

7 July Tonight went out Near Loop Trail to check the ♂ Lachesis w/ Donnelly and Guyer. At 2005 hr, 450 m on the trail, Craig saw a cat go off the trail. We converged lights into the forest and saw a young Panthera

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7 July (continued) orca about 10 m in. At first I could only see hindquarters and tail. Then it stepped into full view and paused, took two steps, then melted out of sight. The lack of sound, given how noisy the forest can be, was stunning. It is little wonder that Indians revere the big cats and believe in forest gods! This cat clearly had the right spotted pattern, a distinctly marked tail, and weighed I guess ≈50-60 lbs.

13 July Been checking the bachesis several times each day. This AM I got up at 0200 and checked the two on the research trail every hour or so until dawn. Heard a rooster at 0407, saw 2 small Eleutherodactylus bipercatus and a Sylvilagus brasiliensis at 0452. Sky was noticeably light at 0445 but forest dark; trail easy to see at 0507.

15 July Continue to check the three bachesis several times each day. Adult ♂ on Near Loop Trail has been inside an old treefall for days, hard to observe. The juvenile ♀ was unexpectedly in under her fern today and has a big food bellge. At 0928 hr found a huge (>1.5 m) Lampropeltis triangulum crawling slowly in litter just off the

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15 July (continued) Research Trail at 450 m (CES). dt struggled, mushed, tried to bite. Occupied all afternoon w/ TV, radio, and newspaper people from San Jose.

17 July At 2200 discovered that ♂ Lachesis on Near Loop has left log, can't pick up signal. Saw a rat-size rodent w/ obvious cheek pouches (cf. Heteromys) active in litter beside trail.

18 July Saw 2 Sylvilagus brasiliensis on the CES (near O) at 0455 hr. in light rain. At 1018 hr, ≈400 m on CES, I missed an adult Dendrophidion vinitor. Snake crawled rapidly off trail as I approached, and I could see the blue interscalar skin faintly, as well as stripes on the tail. Froze at trailside, but dashed out of sight into leaves when I grabbed.

19 July Checked Lachesis off and on all day. At ≈2230 hr saw a Philander opossum beside sidewalk near bathroom.

20 July Checked both Lachesis on CES in late morning. At 1127 hr, CES 160, caught and released hatchling Dendrophidion vinitor as it went off the trail; no palpable food. At 1128 hr, CES 150 m, missed a large Masticodryas melanolomus as it dashed off the trail and into a hole under an old treefall.

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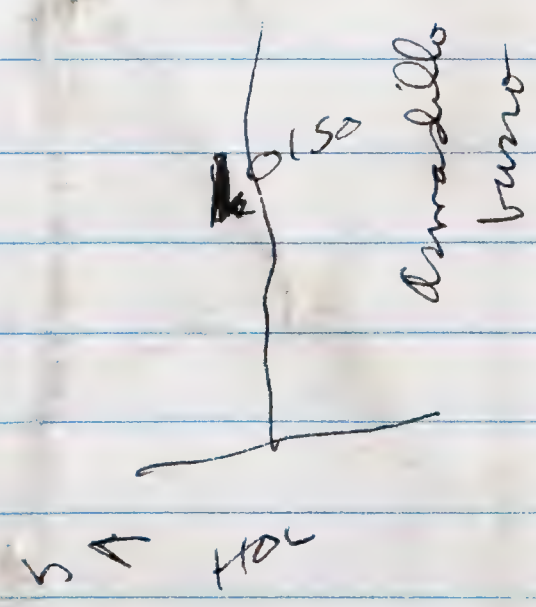
20 July (continued) Both snakes were active on sun-flecked forest litter. At ≈1345 hr went to 590 m on the Central Trail, and caught a big ♀ Lachesis muta that Edwin Paniagua spotted this morning. It was coiled near a ridgetop in dense vegetation, ≈1 m off trail, w/ head down in coil and facing away from it. Wt. 3.9 kg, length 2.2 m, the largest venomous snake I've ever caught, and my 7th Lachesis. Like all the others, a slow moving, tranquil snake. Hard storms off and on all afternoon and evening.

21 July

June 1350 - 1445h - big pretty Eleuth
1485 - cat scat
June 0925 - edge E. P.'s finca, large Peccaries in our
across trail, hot, - inflate & bite
1356 - big Peccaries on S. Jaguar

Griseofulvina
"Gutis products Corp"
Eleuth minus, 0945 h
13.15g, 50mm SV, HW 20.1
Pleurocens 45



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9 September ≈2 mi N. California City, Kern Co., California
Clear, moonless night, lots of stars and Milky Way as we (John Carothers, Claudia Luke) drove in just after midnight. At 0006 hr we hit a neonate Crotalus scutulatus on Neuralia Rd. Slept at the junction of two dirt roads just W. of the Tortoise Reserve.
5 mi N. California City, Kern Co., California
Beautiful orange eastern sky before 0600, coyotes calling in the distance. From 0813 to ≈0915 we walked a circuit I usually try. Saw no Gopherus; numerous tracks of Cnemidophorus tigris and 2 juv.; 5 Uta stansburiana; 1 ♀ Phrynosoma platyrhinos (≈0915 hr, not gravid); and 1 adult Crotalus scutulatus. The rattlesnake was in shade, in open, on W. side of a creosote bush at 0848 hr. It seemed sluggish - never rattled continuously nor moved fast, but did quickly assume S-coil. Found a small adult Gopherus crossing Neuralia Rd. ≈1-2 mi N. of California City, in sun at 0946 hr. Had lunch at the Sidewinder Cafe in Newberry Springs, San Bernardino Co. Owner told me she'd seen a photo of a "diamond back" rattlesnake 5-6 feet long from the mountains south of town - but I'm very skeptical as Crotalus atrox shouldn't be there and C. mitchelli and C. scutulatus don't get that big. We reached the "Bunny Club" ≈1700 hr.

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9 September (continued)

"Bunny Club", SE base of Granite Mtns, San Bernardino Co., California
As we drove and walked into here, saw Lepus, Sylvilagus, Neotoma, Ammospermophilus, and Spermophilus variegatus — all active in late afternoon — and an adult Sceloporus magister. Talked to Bob Norris (Dept. Geology, U.C. S.B.) and his wife, part owners of the cabin. Earlier this year they'd seen a nursing ♀ and 3 or 4 young Bassariscus in the cabin.
We camped at Cove Spring. Saw adults, juveniles and tadpoles of Bufo punctatus — the transformed ones hopping toward the stream after dusk. Mosquitoes so bad — surprisingly — that we had to cover our arms and heads w/ shirts to sleep.

10 September

From before 10 til after 12 noon we walked around creosote scrub and Kelso Dunes, on the SE slopes of the dune faces. Got several Uma, mostly juveniles. Adults very wary, running ≥15-20 m straight, nonstop, then often down a hole. Saw two small Gambelia, one w/ rusty and one w/ red spots. John saw a Gopherus in creosote scrub between the dirt road and the S. dune face, and I found a fine big ♂ Urosaurus on a creosote bush. Went to Valcan mine to swim, on the W. slopes of the Providence Mountains via a good dirt road just S. of Kelso. Then to Baker for groceries, back to camp for supper, and out to Kelso Dunes to walk around at night. Saw no Crotalus cerastes tracks there

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10 September (continued) by day or night. Missed 1 unidentified snake, caught a live neonate Crotalus scutulatus, and saw a pair of Vulpes macrotis (2245 h) – the foxes had big glowing yellow eyes that reminded us all of roadside reflectors they were so bright. Also found and released a nongravid adult ♀ Coleonyx on the road into our campsite.

11 September Out to the dunes from ≈0900-1200. Caught several Callisaurus along Kelso Rd., saw lots of Uta on small rocks and ≥5 Gambelia. Saw Cnemidophorus & another Gambelia in creosote scrub, and caught 5 Uma on the dunes. Claudia saw 1 Crotalus cerastes track. Went to Vulcan mine to swim, then to near camp ≈1500 h for snack. Sceloporus occidentalis on boulders (outliers of Granite Mountains). We've seen lots of raptors so far – ≥1 Great Horned Owl, ≥1 Golden Eagle (resting on power pole over creosote scrub – this is w/in 2 miles of where we saw 2 last year over cattle pen), and several apparent Red tailed Hawks. Also ≥3 Geococcyx and some Shrikes – lots of potential reptile predators. Back out to Kelso Dunes ≈1700.

10 Sept 2028hr - AOR neonate C. scutulatus 63.5

turn W. to Kelso Dunes 64.4

2245 - pair of kit foxes

2313 - Coleonyx on road in adf range

11 Sept 2135hr - C. cerastes AOR 401.2

2208 - DOR C. ec. ≈12-14", ants, not sexed

2223 - AOR subad C. cerastes 424.0

Kelso RR tracks 424.7

12 Sept x0700 - M. fl.

≈845 - M. fl. fresh on I 40

0945 - 1025 Piñon - Uta, Crev., Call., Dipo, Hadrurus

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Calif: Mendocino Co.
Costa Rica
Oklahoma: Cimarron Co.
New Mexico: San Miguel, Cibola Cos.
Calif: Orange, San Bernadino Cos.

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23 March 15 mi SE Booneville on Hwy 128, Mendocino Co. California
Left Berkeley at ≈1345 hr with Herpetology class and two TAs, David Darda and Robert Seib. Beautiful, warm weather. Stopped beside road at this locality ≈1600 hr to check large old logs beside stream on SW side of road. Found 3 Gerhonotus multicarinatus and 3 Sceloporus occidentalis under loose bark; two of the Gerhonotus were together and a pair (♂ larger).
Hendy Woods State Park, Mendocino Co., California
Camped here. Ranger says he sees Lynx rufus every year, and sign of Ursus and Felis concolor occasionally.

24 March 1.7 mi N. Hwy 128 on Flynn Creek Rd., Mendocino Co. California
Stopped here ≈0900–10:30. Found 1 large Diadophis under a railroad tie in the sun; no food, scruffy skin, tail displayed, released. Also 3 Taricha granulosa, several Batrachoseps, lots of Aneides flavipunctatus, and even more Ensatina. Found a dead Thamnophis elegans, TL ≈ 35 cm, on the road.
6.1 mi E. Flynn Creek Rd on Orr Springs Rd, Mendocino Co.
Stopped here from 11:00–13:45 hr. There is a dump beside the road, on a ridge, strewn with old lumber and car parts. There are small temporary pools, and we found many Hyla regilla: egg masses ready to hatch, tadpoles of two sizes, and an adult female. One student watched tads going along small stems, end to end, feeding

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24 March (continued) Another saw toads eating a dead toad. Found a ♂ Chasma under a board. Under a single piece of tin there was a Thamnophis couchii, a Diadophis (escaped), and a ♀ Chasma. Under a board was a T. elegans, and there was a T. sirtalis under a car hood at the edge of the forest. All the snakes seemed very scruffy, and only the T. sirtalis had palpable food, an adult Ensatina that had been swallowed tail first. Under logs and boards, we found 1 Taricha rivularis, 1 Aneides ferreus, several Batrachoseps, lots of A. flavipunctatus, and even more Ensatina. Saw quite a few Scelopoms occidentalis and 1 Eumeces.

9.1 mi E. of Flynn Creek Rd. on Orr Springs Rd, Mendocino Co.
This is an old N. facing road cut w/ a stream coming down through it, at a hairpin turn in the road.

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Finca La Selva, Puerto Viejo de Sarapiquí, Prov. Heredia, Costa Rica

8 June ~~May~~ Left Berkeley at 6 AM on the 6th, flew to Los Angeles where I met David Hardy (MD from Tucson), then to San Jose, Costa Rica via Mexico City and Guatemala. Spent yesterday in San Jose getting boots, etc., and visiting the Instituto Clodomiro Picado. Had an uneventful ride out and arrived here at ≈12 noon. Learned that the Liebermann's had found a Bothrops nasutus: SV 317 mm, tail 154?, 22.5 g, ♀. It had swallowed head-first a wood creeper, Glyphorynchus: crown-rump 63 mm, head-width 15.5 mm, max. dia. of body ≈ 27.0 mm, 16.5 g. For ≈1 hour Manuel Santana, Dave Hardy, and I walked out around the loop trail and back. Caught a juvenile Pseustes at 1602 h in leaves beside trail at ≈CCC 1025 m (just before bridge over Sotillo). It struck w/ widely opened mouth and resembled a Bothrops schlegeli so much in appearance (green w/ maroon bands) that I thought a viper for a while and pinned it. The Liebermans saw a subadult Felis concolor last night.

9 June ~~May~~ Today Rodolfo Peralta found at noon a Bothrops nasutus: 296 + 32 mm, 22.0 g. It contained a Heteromys, freshly swallowed head-first: SV 102 mm, tail 95 mm, max dia (head) 15 mm, 28.5 g. Dave Hardy and walked out the CES

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9 June (continued) and the Alajo to the Río Sarapiquí, collected a pile of smelly Lutra scat, full of crayfish parts, at the rock where I've found otter scats before. Just before we reached the station, at 1025 hrs ≈100 m on the CES, I caught a Dendrophidion percomatum. It inflated, exposing interscalar skin, and struck only once. During the morning Michael Fogden caught a beautiful little Leptophis nebulosus.

10 June From ≈0800 - 1120 walked w/ Manuel and Dave: out Sabalo-Esquina Trail to ≈1700 m to check the terciopelo stump (empty). At 0858 hr, ≈1125 on SSE, we caught an adult Dendrophidion vinitor as it crawled rapidly away at trailside. When grabbed, it inflated the anterior ≈½ of its body, exposing the blue interscalar skin, and struck and bit at my hand. We came back by way of the Sendero El Swampo, where we saw large Felis tracks in the mud and checked the old Lachesis site at 750m sign on the trail (no snake). At 1102 hr, ≈ 200m on the East River Rd., Manuel saw a fast brown snake, cf. Masticophyas, that was too fast for us. At ≈1600 hr Carol Baird (grad student from Berkeley) took us out to her Heliconia study plot at ≈950 m on the West River Trail and pointed out a very young Bothrops schlegelii. The little viper, est. total length

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10 June (continued) 20cm, was in a flat, compact, folded (not really coiled) posture on a Heliconia trunk that was at an angle (see photos). Snake was such that tail was out to one side, head perpendicular to long axis of plant. Maybe a good stance to catch Norops? We left it alone in hopes of learning how long it will stay there. From ≈2030 to 2145 hr we walked out the CES to ≈800m w/out seeing any vertebrates. Heard numerous Eleutherodactylus diastema, a few Agalychnis callidryas and some unidentified frogs, and a Crested Owl. Very bright moon and sky and almost no rain today.

11 June At ≈0800 hr Orlando found a very young, brightly colored Micrurus nigrocinctus active by the bridge between the dorm and the AC labs. Dave Hardy and I walked around the Camino Experimental and found a large Bufo marinus hopping across CEN, just past its junction w/ CES - the first I've ever seen in the forest. This was at 0845 hr. At 0857 hr I missed an Eleutherodactylus minutus in litter at ≈ CEN 600 m. We arrived at SO ≈970m to see the little Bothrops schlegelii from yesterday, and found it just finishing an anole, Norops limifrons - only one hind foot and the complete tail visible when we arrived at 0918 hr. Snake was in a new site ≈2 m from yesterday. ~~Ann Baker~~ Anne Brooke told me the snake was coiled at the new site when

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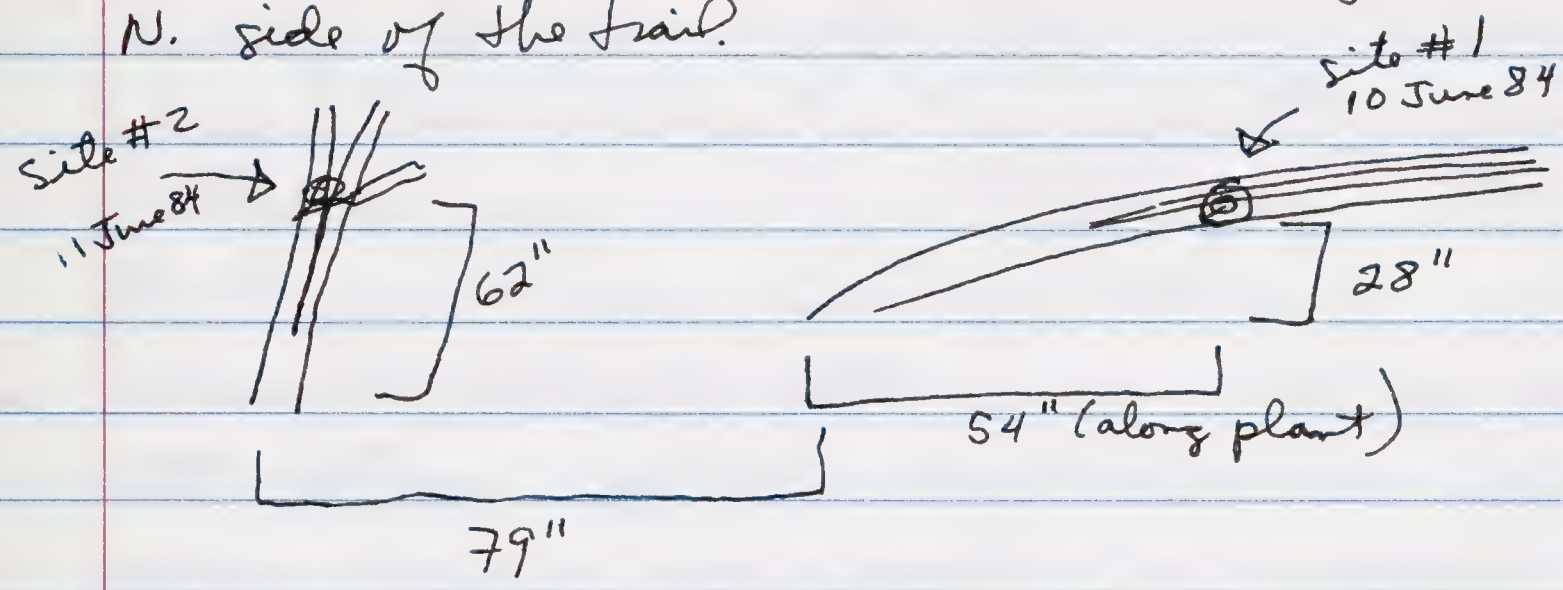
11 June (continued) when she arrived ≈0700 hr this morning. She had noticed the snake coiled and not feeding ≤0900 hr. Both sites are in Heliconia right along the trail, in a fairly open situation only a few 10's ~~or~~ of meters S. of the Rio Puerto Viejo, on the N. side of the trail.



at 0930 hr the anole had disappeared entirely disappeared down the snake's throat, so the entire feeding event took ≈20-40 minutes. The snake turned S. and by 0945 hr had crawled ≈6" and assumed a loose coil facing in toward a thick Heliconia stem. In contrast to yesterday, it now seem "sheltered" and not positioned to ambush anything. Took photos of swallowing and post-feeding behavior, then gently collected the snake, returned to lab, and processed it. Caught a small Rana warszewitzi in litter on way back, ≈1000 hr. Bothrops schlegeli: 6.25 g, SV 232 mm, tail 41 mm, head width 8.0 mm. The Norops limifrons had been swallowed bent double at the neck,

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11 June (continued) wt. ≈0.9 g, SV 39 mm, tail complete but not measured; max. dia. of head 5.4 mm. We reinserted the Norops into the Bothrops w/out much difficulty, and ≈1530 hr released it at capture site. When we left it was draped loosely along a small branch at the original place. Then walked out to arboretum, searched buttresses, and back to AC lab. Saw nothing. Really hard rain started ≈ 1900hr.

12 June Walked out Sendero Occidental and searched for the little Bothrops schlegli from 0830 - 0845hrs, w/out success. Saw a Norops humilis ♂ and several N. leiniferus in the same Heliconia patch, as well as Dendrobates pumilio. Then walked CEN and out LOC to bridge, then back via CES. Saw a subadult Bufo haematiticus on the CEN at 0910hr and picked up a small cat snat at ≈475 m on CEN. Just as we got to the jct. of CES and SOC, Ann Baker called us to an adult Pseustes poecilonotus in the trail at 10:00hr; it inflated, gaped, and struck when aized. It is marked. While we were examining it Michael Fogden caught an adult Leptophis depressirostris in high grass beside sidewalk at the origin of CES (forest edge); he'd already found a very young Chironius grandisquamis. Took a quick coffee

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12 June (continued) break, then followed Michael and Patricia out to a roost of 11 Ectophylla alba, in their "homemade" tent under a Heliconia leaf on the SOR at ≈590 m. Started raining hard ≈ 12:15 PM. Rained all afternoon and off and on into evening. Michael Fogden caught a big green Bothrops schlegeli in vegetation above the sidewalk near the Sara Bridge, and a sleeping Dendroplindion viridis ≈ ½ m above ground on vegetation, both after dark.

13 June Left a little after 0800 w/ Dave and Manuel, out CCC to CC ≈1200, then back by way of CCL. at 0844 hr ≈CC50m, caught a brown Norops w/ orange dewlap ≈1.5 m up a tree trunk. at 0855, ≈ 500 m on CC, an Eleutherodactylus minus (?). at CC 700m a big Felis onca scat (photos). at CC 850m, ≈10m apart, 2 cat scats. The first was completely exposed, seemingly a Felis onca scat, made solely of hair and teeth (peccary?). The second consisted of only a couple of small, very fresh pieces, partly covered by an obvious flat scrape, such that several square inches of earth were exposed and the leaves were over the feces. We wonder if this is from a small Felis concolor? We saw two other similar scraped places along nearby CC, perhaps where a (the?) cat

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13 June (continued)

had urinated. When we returned, the Fogdens were just headed out to where they'd found an ocelot, the gold phase of Bothrops schlegelii. Went out with them and saw a spectacular snake. It is on a Heliconia imbricatta petiole, ≈ 2+ meters above ground, in a stand on the edge of Hunter's cacao grove. The snake is suspended on the petiole by its tail and posterior body, w/ its head and neck downward in a striking coil and pointed at the nearby (≈15 cm) inflorescence. Snake immobile while we moved around taking pictures, but once when my flash went off I saw it tongue flick. It seems ideally positioned to seize a hummingbird, and it is stunningly easy to see from several meters away. Michael remained when we left for lunch. It turns out that the big green one Michael found east of the bridge last night is one I caught and marked on 3 June 1983 on the west end of the bridge! Michael watched the ocelot til 1700, I watched it til 1900, and Dave took over right after that. From ≈1000h til 1924 the snake scarcely moved, an impressive feat given it was coiled around an almost vertical petiole. At 1924hrs the snake began moving up, then turned down, crossed to an adjacent tree, whereupon he captured it and

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13 June (continued) brought it in to avoid its escape.

14 June Walked Camino Experimental loop and out to 50C ≈960, checked the two sites for the little green Bothrops schlegeli but didn't see it. Saw only a few Norops along the way. A gray overcast morning w/ intermittent light showers. Michael got two Bothrops nasutus and a Rhadinaea decorata on the Loop Trail.

15 June Dave and I got up at 0430 and walked on the Camino Experimental until ≈0515hr in hopes of seeing an active bushmaster, but found nothing. After breakfast, we walked from 0800 to ≈1120: out 50R, 5H0, across the big swamp to the Camino Central to ≈1650m. Returned by way of the Camino Circulo Tejaro. At 0823hr, ≈135m on 50R, we caught a pretty, reddish Xenodon rabdocephalus as it crawled rapidly off the trail in leaf litter. It thrashed and shat when seized, and tried to bite when held by the neck. At 0845hr, 5H0 ≈390m, we missed an unidentified Crown and/or gray snake, ≥18" total length, in leaves beside the trail — the possibility that it was a Bothrops asper made us hesitate a little too long, and also just at that moment Dave got stung by two balas at once

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15 June (continued) on his right hand. at 1020h, ≈ CC 1375m, we found a fairly fresh large cat scat that had been scraped over a 6" limb that had fallen across the trail. Took photos. a few meters farther towards the station there was a tremendous uproar in the canopy overhead, as we were harangued and bombarded by ≥5 Ateles. Orlando returned at lunch w/ 4 bags of cat scats. Soon after lunch ≈1300-1400h, George Schaty (Botany, U. Wisconsin) saw a Spilotes pullatus attacking a juvenile, ambulatory rat near the little bridge on the 50C (≈700 m?). The adult rat was more brown than gray and from the size must have been Proechimys; George assured me it was not an opossum. He first saw the adult rat and at least two young going across the trail, while a third young went to the opposite side, seeming very nervous. As George walked past the rat and a large tree root, the ≈1.5 m Spilotes dashed out and grabbed a fourth rat. It chomped the juvenile rat briefly then held it in a body coil, released the mouth and faced George in what he felt was an aggressive stance. He returned to the station for Manuel and Dave, but they couldn't find the snake or the rats. at ≈1900h in the low vegetation beside

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15 June (continued) the AC lab sidewalk, Michael Fogden watched a young Imantodes cenchoa eat a small anole. It took 2 minutes to swallow the lizard to the base of the tail, 5 minutes to completely ingest it. When handled, the snake gives off a very foul cloacal discharge. Imantodes ♂: head width 7.4 mm; tail 125 mm; SV 513 mm; 6.5 g. Prey was swallowed head-first, a Norops limifrons: SV 9 mm, head width 3.4 mm, 0.15 g.

16 June With Dave Hardy, walked out CCC to southwest Trail, then up West Boundary Trail and back in on the Camino Experimental Sur. At 0846 hr, right at the 600 m sign on SSO, we saw two large, tourquoise, tinamou eggs at the base of a big tree, between the buttresses. At 1006 hr by the 250 m sign on CES, I walked over a young adult (size, pattern) Mastigodryas melanolomus without seeing or disturbing it. The snake was frozen in a crawling posture, at the edge of a hollow log abutting the trail. The snake was on the trail, head up and pointing at the log. Would have been a good place from which to ambush a foraging Ameiva festiva. The snake thrashed and bit, hanging on tenaciously, when I seized it. At 1925 hr Anne Baker

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16 June (continued) (Berkeley postgrad) showed Michael Fogden asleep on a limb of a sapling, about 2.2 m above ground at the west end of the Sura Bridge on the AC lab sidewalk, a large Mastigodryas which I caught.

17 June Rained all morning and we stayed in. Right at noon ~~the~~ students from Duke summoned us to a Pentachethra tree just off the CCL near its origin. One man (Richard) had bent down to examine a seedling and saw a large Bothrops asper moving off. While one went for us the other watched, and shortly before we arrived it went down a hole. While we were standing around the hole it came out behind us and started into a brush pile, where we caught it. Snake was not aggressive, although it bit the snakehook as we were getting into a plastic can. It is large ♀, seemingly not gravid and without food.

18 June At ≈0830 hr we palped a Minimitter Model L transmitter (9 g) into the ♀ Bothrops asper w/out difficulty. I held the head, Manuel the body, and Richard the tail. Dave pushed down the transmitter and clipped the 15th vertebral anterior to the anal plate. The snake weighed 2.15 kg, SVL 1595 mm, tail L 185 mm, and therefore I suspect, allowing for little kinks, a total length of 1.8 m. We

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18 June (continued)

her at the capture site at 1008 hr, whereupon she crawled 2-3 m and coiled loosely beside a fallen log w/ her head positioned vertically against it. For the next ≈42 min the only movements were tongue flick clusters a couple of times when I moved and, at least twice, a head shake, seemingly at the mosquitoes and occasional flies around her head. At 1050:14 hr she began rubbing the sides of her head on the log, as if trying to shed (We knew this was imminent, as the old skin broke in a few places during capture and processing.) At 1058 hr she was stretched full length along and under the log (it was ≈30-40 cm above the ground here), moving very slowly across the forest floor. Periodically she pushed her snout and sides of her head against leaves, standing stems, etc. At 1148 hr the snake slowly crossed the CCL going N, still trying to shed, with some loose skin hanging off the head now. At 1156 hr, temp 26/30, the snake was ≈3 m N of the CCL, heading N. When we returned from lunch at ≈1345 hr, snake was in a loose coil under a fallen Welfia frond (dry, brown) that leaned against a hillock of dirt, forming a cover. Temp. 27/30. ≈1415 discovered snake had moved a few meters farther N. For the next 3 hours the snake crawled slowly northward.

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18 June (continued)

at 1600hr we saw her emerge into the open from alongside a fallen log, with ≈ ant. ⅓ of body showing new skin. She continued crawling, at times listing strongly a part or most of her body to (?) rub a particular portion. By ≈ 1640hr she reached the buttresses of a huge Ceiba tree, crawled partly into one space, then against the buttress, out, and into the next one. At each of two buttress walls she applied the anterior part of her body flat against the wood, then crawled the rest through that stretch, still rubbing. After the second buttress, she turned out into the forest, crawling along under a patch of small palms. I was repeatedly impressed by two aspects of skin control: "rippling" at the site of new-old skin separation, and rolling of parts of her body to rub the dorsum on the ground. At times ½ or more of the yellow venter was showing. at ≈1710hr I stepped from behind a Ceiba root, she apparently sensed me, and crawled rapidly ≥2 body lengths away. We left. Returned with Dave, Manuel, and Richard ≈ 2050hr. Got signal in same general area, but it took us 245 minutes until Manuel saw her coiled w/ head up at an angle under a fallen, partly crumpled brown Welfia frond. W/in 1 min of us putting the light on her she

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18 June (continued) turned and crawled partly out, head N, and froze. We left quietly.

19 June Dave Hardy and I went out and found the snake at 0800hr. She was coiled under the same Welfia frond: loose flat coil w/ head on an outer loop, facing NNW. Took some photos, did not, apparently, disturb her, and left at 0820hr. This site is on a terrace edge, a few meters beyond the big Ceiba and overlooking the Salto. Snake now seems to be clearly shed. Temp. 26/30. At ≈0950hr I released the subadult Masticodryas that we caught 16 June at 250 CES. As I reached the spot by the log, a juvenile Ameiva ran across the only large blotch of sunlight in view on the trail, precisely the spot where the snake had been lying when we first spied it. We returned at 1045hr, snake same, 29/30; ground 24.2C; air 1m up in shade 26.2. We left at 1102hr. We returned at 1423hr, snake same place except head now ≈180° from before and less elevated. The snake had 2 complete adjacent loops w/ remainder under them, head in center and lying on inner loop facing out. Snake 30/30, ground 25.2°, air 26.5°. Just before we left at 1432hr, snake suddenly swung head to face the stream and land w/ it a few inches outside the outer loop. I was standing 2m away for a couple of minutes, immobile, but

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19 June (continued) I don't think I caused the movement. Until that movement the snake seemed "asleep" and was positioned such that it's head faced into the Welfia frond shelter; seemingly not a good posture from which to ambush anything. But it surely moved fast! At 1645hr the B. asper's coil had shifted a little to the ~~left~~ N; head down, facing WSW; 30/30; ground, 25.0°; air, 25.2°. At 2020hr, snake same, 29/30. Cathy Propper (Oregon St. U.) saw a dark snake chase an Ameiva at 1027hr in the Arboretum, for ≈20m down a slope. She wasn't sure if it was Spilotes or Mastigodryas. At 1805hr I caught an adult (gravid?) Coralluss annulatus crawling on a work bench behind the dining hall; snake was fairly calm, but snapped suddenly when held behind the head. During a later photo session its behavior was the same - very tranquil if handled gently.

20 June At 0816hr we found the big Bothrops asper ≈ 10-15" NW of last position, in flat coil, 27/30. At 1700hr during a heavy rain, the snake is almost completely concealed under the same Welfia frond. As we started back in the downpour (sky very dark) we found a large adult Bothrops nasutus crawling away from the boardwalk in leaves at the jct. of CCL and SOR. This morning two big ~~boas were~~ Boa constrictor

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20 June (continued) were seen by workmen in Hunter's Cacao grove at the NW edge of La Selva, near which (♂) Manuel caught. Just before noon a large, spectacular Polychrus gutturosus fell out of a small, lone tree at the edge of the Beige Beige Grove, at Debra Clark's feet. It is very prone to bite, can move up a tree fairly fast when pursued, and flattens its body when threatened. I am impressed that the hind feet are slightly (?) zygodactylus. Last night Michael Fogden caught an adult Micrurus alleni in the CES swamp, swimming in water and muck. When maneuvered for photos, it coils and elevates the tail only when restrained; otherwise seems to depend on fast and erratic crawling. (See also below.)

21 June at 0830 hr the big ♀ Bothrops asper is in the same position as last night, but when I stepped carefully to within 1 m of the palm frond she suddenly darted about ≤ one body length out toward the stream (and thus away from me — I have been repeatedly impressed by this animal's timidity [?] except when cornered. We've also been impressed with how "touchy" she is compared to all the Lachesis we've seen). We left quietly and walked out to CES 700 w/out seeing anything. At 1015 hr we caught an adult Bothrops asper that Isaias showed

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21 June (continued)

us. It was under a long platform that lay on the ground under the porch of "Rafael's House," overlooking the Rio Puerto Viejo. Isaias had lifted the wooden thing, seen the fer-de-lance, and set it down gently. The snake seemed asleep tight, high coil, w/ head facing under the house. When I tried to gently hook it out, the snake crawled fairly rapidly towards the darkness under the house. When I restrained it with the hook and a hand on the tail, it struck 2-3 times, out and up, such that the mouth flashed wide open and white, and seemed to be held open for a short time. Looks like ≈1.5 m total length, very pretty. Was in a good place to cause a snakebite accident. Later when we put it out in leaves to photograph, this snake seemed very calm, and I was able to carefully and slowly lift it into a can on a hook.
[Forgot to write on 20 June that we walked out to ≈600 CES at night, with a detour into the CES swamp. I found a subadult (?) Oxybrochus petola stretched out along the rib of a small palm leaf, ≈1 m above ground at trailside, CES 200; this was 2100-2200 hrs. In the swamp we saw Agalychnis callidryas, A. saltator, Hyla elaeochroa, and Hyla boulengeri, and heard Gastrophryne pictiventris.]

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21 June (continued) at 1034 hr the big ♀ B. asper is in a flat coil facing the Salto, ≈ 1 m N of the Welfia frond but almost covered w/ leaves; 26/30. at ≈2115 hr snake is same coil but head is on outer edge, facing S. Seems alert; 26/30.

22 June at 0829 hr snake is in same spot, N. of Welfia frond, but now head faces N to Salto and is down on an outer coil; 25/30. at 1028 hr I caught a young adult Leptophis depressirostris basking (?) in leaves beside the side wall at the edge of the PB Grove. This was in a patch of bright sunlight, after much rain lately. I pinned the snake's tail initially, and it turned and tried to escape into the adjacent forest rather than across the trail. After lunch we processed the Bothrops asper from Rafael's house and inserted a Channel 2 Minimitter (the larger ♀ off CCL is Ch. 5). Snake has a SV of 1322 mm, tail 183 mm, and wt 1.2 kg. In contrast to the photo session yesterday, this time the snake was nervous and snappy, alternating fast gliding away from me w/ sudden turn-and-lunge then brief pause w/ wide open mouth. We released this snake at 1530 hr and it immediately coiled in virtually the same place it was captured. When I checked at 1630 hr it had moved to the opposite end of the board. When we

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22 June (continued)

returned at 0245 hr snake had moved. Finally located a very strong signal in high grass on a slope just NW of the dock stairs, off the edge of the terrace the house is on. The snake had thus moved several tens of meters to the ENE. We did not persevere in visually locating the snake because of the difficulty of seeing it. While we stood as close as we got, Manuel noticed a Sylvilagus erect ≈3 m away, frozen. Despite our noise, light, and movements this rabbit remained stationary. Was it aware of the terciopelo or us? At 2345 hr we located the larger ♀ B. asper (Ch 5), now several meters SW of the Welfia frond and up the slope of a hillock. She was in a flat coil (couldn't see her well) on a slope that faced away from the stream; 27/30. At 2104 hr, as we initially went out to locate the two Bothrops, we encountered a massive Lachesis muta crossing the trail at SOR 100 m. Manuel was in front and suddenly exclaimed something, then went from talking extremely fast in Spanish to sputtering. I thought he saw a jaguar and I stepped to the left of the boardwalk to get a look. Maybe 20 m ahead, clearly illuminated, was the body and tail of an apparently huge bushmaster. The tail and posterior hung off the left of the boardwalk, and the body extended

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2 June
(continued)

out of sight to the right into the forest. My initial thought was, that snake is 10-12 feet long and we are not going to catch it! Sent Manuel and Sarah Tieberman for a garbage can. When I first approached the snake it was frozen as if crawling slowly, head down to ground. I could see that it was very heavy, but perhaps not even 2 m long. When I stepped off the boardwalk about 3 m away it suddenly turned, formed an elevated S-coil, and froze. When I took one step it raised the coil, vibrated the tail audibly, and, after a moment, struck toward me. The mouth was opened but there was no obvious "flash" as with tersiopelos. Twice the snake relaxed the coil and started slowly into the forest w/ head down to the ground, and each time I hooked it out it quickly assumed an S-coil. Manuel and Sarah arrived w/ the can. At least four or five times I tried to lift the snake, and in all but one instance as soon as it was going off the ground it turned up the hook while forming an S-coil. As I set it down each time, it started into the forest. When I took a step toward it the snake turned, also inflated neck coiled, and at least once, struck. That time as I jumped back I heard Manuel and Sarah behind

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22 June (continued) me crash into the bushes. Once I got it almost in, then the next time, all the way. The snake weighs ≈4.2 kg, heaviest we've caught yet. It seems to be either gravid or have a large food item, and I'm not sure of the length. This is the first we've caught at night, and was impressively more aggressive than those handled in the daytime. Ironic that Dave Hardy, who originally initiated his 2 week visit in hopes of seeing a bushmaster, left 8½ hr before we found this one. What a day!

23 June At 1000 hr the smaller Bothrops asper (ch. 2) is in high grass a few meters N of the dock stairs and just above the river; 25/30. Still can't see it. At ≈1030 hr the larger B. asper (ch 5) is in the same place, facing NE (took photos). Rained most of the afternoon so couldn't radiotag the Lachesis. At 1620 hr ch 2 is apparently in the same place; 26/30. At 1636 hr, ch 5 is in the same place and position; 26/30.

24 June Most of the morning was sunny and very hot. At 1025 hr, the ch 2 Bothrops asper was apparently in the same place; 28/30. At 1036 hr, the ch 5 B. asper was in the same place w/ head facing S, on an outer coil; 26/30 (in shaded area). It began raining hard just after lunch and continued until ≈ 1630 hr, so we couldn't tag the Lachesis. Continued to drizzle after that. At 1730 hr I checked the

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24 June (continued)

Rio Puerto Viejo below the station, at the base of a long chain of concrete steps. Normally the river here moves briskly, but is shallow, clear enough to see easily the large Cichlasoma fish, and so mellow as to be easy to stand in and bath. Now the water is a light reddish brown, swirling furiously around the trunks of big trees it has just surrounded, and going by very fast. Trees that were once well up on the banks have their lower limbs in the current, leaves whipping around. The Sura, a side stream has risen so high it's backflowing under its bridge, and foliage of streamside trees is visible beneath the murky surface. This Puerto Vio is not the benign river across which two of us waded in the dark carrying a heavy, seriously ill Eric Bassett a couple of years ago! After some thought I decided to see how fast it took the river to rise the heighth of one step, calibrated from first splash over of one to the next step: exactly 5 minutes for ≈20 cm. While I sat there in the dusk, waiting for the second splash, huge logs went by. Each was surrounded by a slimy, foamy froth of leaves and other debris, a slick of elongate shape due to the current (I suppose). On one log was a whitish yellow, inscrutible, long dead pig. The pig was aligned along

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24 June (continued) the long axis of the log, its ears and legs flopped down the sides and large jagged splits in its bloated sides. It's not hard to see how tropical writers like Garcia Marquez and Vargas Llosa drift so easily into the surreal! At 2044 h ch 2 was apparently in the same area; 22/30. At 2053 h, ch 5 was in the same place w/ its head facing E; 24/30. At 2109 h, George Schatz showed me a gravid ♀ Leptodeira septentrionalis, coiled on dirt w/ its head resting against the sidewalk to the bathhouse.

25 June At 0700 we examined the Lachesis, which turned out to be a male and, since it was caught in the Reserve, was therefore not radiotagged. Snake has SV 188 cm, tail 18.5 cm, and therefore a total length of ≈2.1 m. It had patches of dry skin, apparently about to shed, and at least 9 large gorged ticks (2 on head, rest scattered on either side of mid-dorsal ridge). Throughout our restraint of the snake it tried to flex, but no problems. We were assisted by Ann Brooke, Ana Gomez, Debbie Clark, and Sarah Tieberman. At ≈0900 h we failed to find the signal of Bothrops asper ch 2, as did Manuel over a 2 hour period later in the morning. Perhaps it washed or swam away when the river rose yesterday. At 0914 h ch 5 was in the same place w/ head pointing S; 24/30. When Manuel checked this

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25 June (continued)

snake ≈1100hr it had moved ≈1.5m W, under the edge of a large, fallen Dieffenbachia[25/30] leaf. At 1710 hr, this snake is same place, head facing NE and visible from side. At ≈1900hr we released the Lachesis at 100m on the SOR, and it slowly crawled W into the forest, head always down to the leaves and tongue flicking often. I touched its tail several times but never elicited the defensive behavior seen when we first encountered it. We checked the ♀ Bothrops asper Ch5 at ≈2010hr; in same place, head pointed NW and hard to see from side of leaf. This snake is very well concealed!

26 June

a bright sunny day at breakfast. At 0807hr I went out alone to check Bothrops asper Ch5. Forest all aglow w/ light patches. Snake is in the same place, unde the Diefenbachia leaf w/ its head pointing to the Salto, over a loop. Oddly, its tail is out from the coil a few inches - has it moved? Took photos. Manuel, Sarah Zieberman, and Angel the bodman went upstream at ≈10 to search for the other B. asper. They picked up the signal ≈200m downstream from Rafael's house, and when they went ashore they saw an adult Spilotes go up a tree. Sarah and Angel came to the station for me and we boated up river. Very enchanting: cool breeze, waves, no bugs, bird noises. Two large Rhinoclemmys on stumps in the river.

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26 June (continued)

An adult Caiman crocodilus was lying on the long axis of a log on a sandbar at the river's edge, its mouth open and ~~mouth~~ lazily hanging down. Tongue was rather bright yellow, sides of body olive w/ darker bars on tail. When we arrived we could see the Spilotes ≈ 15-20 m up in a tree over the river, and it was the case that the signal was strongest when the receiver was held high in the air. We became semi-believers that the Spilotes had eaten the Bothrops, tho I remained doubtful because of the lack of obvious girth in the former. Manuel and Sarah remained w/ the snake and the rest of us returned after lunch, ≈1330hs, by trail. The Spilotes eventually came to w/in ≈3 m of us, but when we shook the small tree, it moved up and out of sight. The speed and agility w/ which that snake moved in the foliage was impressive – it seemed "at home." As we walked around on the ground trying to see it, the signal seemed louder at one point over the edge of the terrace, on the steep slope of the forested river bank. I said, "it seems we are still looking for a terciopelo." Manuel went down the slope and w/in 10 minutes found the snake, under leaves ≈ ½ way down to the river, such that it could only be seen

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26 June (continued) through a little gap in them at ground level. It was impossible to see from anywhere else! Picked up a large piece of shed Iguana skin on the ground nearby. Temp of snake 25/30 at 1400h. at 1415h we found the big ♀ B. asper in her same spot, head pointed under leaf and tail no longer visible; 27/50. It is still sunny and partly cloudy, hot. Manuel called Alejandro Solazáno at the Instituto Clodomiro Picado. They had a Lachesis scat w/ Coendou spines in it, and a scat from a 2.08 m B. asper w/ spines of Hoplomys. At ≈1630h Manuel checked Ch2 and found it still there, head not showing, 25/30.

27 June at 0736h I found the big B. asper Ch5 in the same place; could see head under leaf, but tail and post. of body were outside on the ground in a hairpin form, not part of the main coil; 24/30. Just before noon Ann Brooke found a Polychrus gutturosus ♂ dead on the SOR, which I preserved. It seemed very slender but otherwise intact, so cause of death is a mystery. Someone brought in two skins that turned out to be Celestes sp. and Diploglossus bilobatus, the latter apparently a gravid ♀. At 2015h I found Ch5 in coil under the leaf; couldn't see head; 25/30.

28 June Manuel and I went up the Rio Puerto Viejo from

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28 June (continued) the station to Rafael's house and found the B aspes (Ch 2) in the same site on the river bank. At 0839 hr we found Ch 5 in its usual place. Michael Fogden caught an adult Micrurus nigrocinctus in the Peje Baje grove that was discovered by workmen cutting grass this morning. At about ≈2015 hr Michael Fogden came running in and led me to an adult Lachesis muta that he found crawling up to the trail at ≈650 CCC. He left a flashlight on the ground pointing into the snake's face and it didn't move for the 14 minutes it took for his ≈2 km round trip! Caught it w/ little difficulty: everytime I gently put a hook on the snake to move it out onto the trail it drew back it's body into an S coil, then turned and began to crawl slowly into the forest. At 2115 hr the B. aspes Ch 5 was OK; 26/30. In talking w/ Manuel tonight I learned he has not kept written note on his checks of the snakes. One or the other of us has checked Ch 5 everyday in the early AM, sometime in the afternoon (usually late) and in the evening (≈19-2200 hr). The other snake (Ch 2) has been checked at least once each day since it was relocated.

29 June Started raining ≈0730 hr and continued into the afternoon. Alejandro Solórzano arrived from the Instituto Clodomiro Picado. Manuel checked

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29 June (continued) both *Bothrops asper* before lunch and they were in the same places. Manuel checked Ch2 & 5 ≈ 2100 hr, both same place.

30 June Michael Fogden saw three *Micrurus nigrocinctus* in one trip around the Camino Circular last night (≈2 km). At ≈0910 hr this morning he caught a 390 g *Lampropeltis triangulum* (1000+150 mm ♀) just as its tail was disappearing into ~~a~~ a hollow log off the AC lab sidewalk in the forest. I palped a freshly eaten (swallowed head-first) *Hebromys* out of the snake that weighed 38.5 g. We took out the *Lachesis* at ≈0930 – she inflated and formed an exaggerated S-coil, but never struck. Had some difficulty w/ the transmitter – couldn't get it past ca. 1/3 down. At 1030 hr I checked *Bothrops asper* Ch5 and found it still under the leaf; 25/30. Ana Gomez and her helper Danilo came in right after lunch to tell us they'd found a big terciopelo in a fresh gap at ≈700 on the El Suampo trail. On our way out we found a tiny *Bothrops nasutus* at 550 CCC at 1330 hr, coiled in the trail. Found the *B. asper* coiled on a log ≈10 cm in diameter and adjacent brush, partly in sun, obviously swollen w/ food or young. Danilo had been working on all fours and suddenly saw the snake crawling between his legs! Said he "had a new birthday" today, meaning I guess, that he's "on borrowed time" from now on. Snake weighed 2.15 kg and by

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30 June (continued) palping we determined it is gravid. Rained off and on all day today, and at ≈2200 hr I noticed that the Río Puerto Viejo is higher than I've ever seen it and the Sura is flowing backward at a good clip.

1 July At ≈0945 hr Alejandro Solórzano found an Erythrolamprus mimus crawling in leaf litter beside the AC Tab sidewalk in forest. It tried to bite him, and tail displayed (thrash, slight coil) and cloacal discharged (fairly foul) when I handled it. ≈1000 hr M. Fogden saw a small adult Mastigodryas melanolomus make an unsuccessful dash at a small Ameiva festiva in the successional plots; the snake missed the lizard by a few inches and did not pursue it. At 1400 hr we released the Lachesis muta Ch 1 at the capture site, at 1426 hr Bothrops asper Ch 5 was in the same place under the Dieffenbachia leaf; 26/30. At ≈1500 hr B. asper Ch 2 was same; 25/30. Checked the L. muta Ch 1 at ≈1530 hr; 27/30. At ≈2130 hr Michael Fogden found a 2.08 m Lachesis muta at ≈320 m on the CES, crawling. I hooked it very gently and it never even formed an S-coil.

2 July When I checked Bothrops asper Ch 5 at 0740 hr it was gone, and later learned that Manuel found it missing but a small scat and the

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2 July (continued) radio behind when he checked late last night. at 0901 hr I found a neonate Dendrophidion vinitor at ≈500 m on the Sendero El Swamp; it inflated most of the body, formed an exaggerated S-coil, struck and bit when handled. Palped (nothing) and released it. at 0917 hr found a fresh cat scat at SSU ≈740, probably either Felis onca or Felis pardalis. Late in the morning found a striped ♀ Norops capito ≈1 m up on a small tree in the swamp.

3 July at 0820 hr the Ch 1 Lachesis muta on the Near Loop is in the same place, same posture w/head facing SE; 23/30. at 0911 hr the gravid ♀ Bothrops asper is coiled on a fallen log ≈4 m off the CCL at ≈760 m, in a gap. We released the snake here yesterday, and this resting site is ≈20 m from the release site. The snake is in shade but bright sun is ≤1 m away. 27/30 at 0924 hr ground temp in shade here is 24.5 C; snake 28/30. at 0926 hr the snake opened its mouth slightly. at 0957 hr the Ch 2 B. asper is in the same hole on the SW bank of the Rio Puerto Viejo and seems to be in pre-shedding condition; 24/30. at 1036 hr the gravid ♀ B. asper Ch 4 still has head facing N; 30/30; ground 26.0°C. at 1050 hr. I grabbed a ≈1 m long Leptophis ahaetulla as it crawled over a mossy tree buttress at

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3 July continued) ≈150 m on the CCL. It gaped, struck repeatedly, and cloacal discharged. At 1435 hr the Lachesis muta ch1 is in the same place, head face N now; 26/30. At 1454 hr the ♀ B. asper is completely exposed to an overcast sky, head facing SSE; 32/30. Before lunch, Helen Young (SUNY Stony Brook) saw an Oxybelis aeneus eating a juvenile Ameiva festiva (blue tail). Two days ago she saw a Leucoptesnis semiplumbea eating an unidentified snake. At 1547 hr I found a very pretty ♀ Norops capito very low on the buttress of a moss-covered tree at ≈1000 m on the CCC.

4 July Spent all day doing repeated checks of the two Bothrops asper (Ch 2,4) and the Lachesis muta (Ch 1) w/ OTS students (see separate data sheets).

5 July At 0417 I saw a paca, ~~Dasy~~ Agouti paca, chewing something as it moved off on a little paca route from the SOR right behind the station. Spent the day making repeated checks of the two B. asper and the Lachesis muta on CCC w/ OTS students. At 0918 hr I caught an adult Pseustes poecilonotus as it crawled across the CCC at ≈900 m. It was very

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5 July (continued) very skinny w/ a stub tail. Inflated, gaped, and bit when handled. This is the second really skinny Pseustes I've seen in a week (other was caught by someone in the Peije Baje grove) and they are the only obviously emaciated snakes I've ever seen here.

6 July We inserted a radio in the 2.08 m Lachesis muta from the CES on 3 July, released it the afternoon of 4 July, and failed to find the signal the next morning. ~~Yesterday~~ This morning Manuel located the signal at a burrow, perhaps of Dasypus. ~~Last night he saw the snake, a ♂, out hunting nearby and early~~ At 0922 hr I can't see the gravid ♀ Bothrops asper Ch 4, but get a signal from the same treefall; overcast, 26/30. At 0926 hr I spotted a part of the body, now behind a big bromeliad on the SE side of a standing tree and still against the same fallen tree trunk, ≲1 m from the previous site. At 1001 hr the snake is same; overcast; 26/30; air 26°C; ground 25°C. At 1030 hr snake is same; overcast; 27/30; air, 26°C; ground, 25.2°C. I stupidly spit from inside my mosquito net. [Forgot to note that I got stung by a bala, Pseudomyrmex clavata here yesterday. I saw it go down my pant leg into my boot, grabbed for it, and felt a sharp, hot, intense sting. Jim Rieger said I was dancing around like a Cossack!] At 1038 hr it is getting sunny. From

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6 July (continued) atop a nearby log. I can see ≤1 m of the snake's body, in a hairpin, but not the head. Snake is on the back edge of the same log as all along, largely hidden from view by sticks and the large bromeliad. At 1101 hr snake is the same; 27/30; air, 26°C; ground 25.8°C. After lunch I walked out by way of CCC w/ Dave and Debbie Clark. At 1401 hr found the Lachesis muta Ch1 in the same place (didn't have a receiver for it w/ me). At 1419 hr B. asper Ch4 is now back in its previous position, N of and a little behind the bromeliad; overcast; 29/30; ground, 26.2°C; air, 26°C. At 1500 hr there was a very brief, light shower. Snake same; 29/30; air, 26°C; ground, 26°C. At 1530 hr, snake, 29/30; ground, 25.8°C; air, 26°C. At 1536 hr patches of blue sky have opened up and there is an uproar of cicadas. At 1600 hr snake is same, 29/30; air, 26°C; ground, 26°C. After dark Manuel found the Lachesis muta on CES out and hunting a short distance from the hole.

7 July Early this morning Manuel saw the Lachesis muta on CES suddenly turn and disappear down the hole. At 0930 hr I found the Bothrops asper Ch4 in full sun w/ beads of water on her back, head facing NW. Snake was in a round flat coil and I took photos. It was

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7 July (continued) N of the bromeliad, as yesterday. Sunny, partly cloudy; air, 25 C; ground, 24.5 C. at 0937 hr snake was only partly in sun. at 1000 hr snake was same, 28/30; ground and air, 25 C. at 1036 hr snake same, 28/30; air, 25.2 C. at 1048 hr I caught a juvenile B. asper at ≈ 700 m CCL; it was seen crawling away in litter at trailside when Danilo reached down to pick up a Dipteryx flower. at 1100 hr snake same, 28/30; ground 25.8 C; air, 26 C. at 1122 hr I found the Ch 2 B. asper in the same hole in the river bank, skin still looking cloudy; 24/30; air, 27 C; ground, 25 C. at 1355 hr I found the Ch 1 Lachesis muta on CCC in the same site w/ its head down in its coil; 25/30; air, 26 C; ground, 25 C. This is just off the edge of an old gap, and sometimes a little sun hits the snake; light, intermittent rain now. at 1415 hr the Ch 4 B. asper is in the same place, head facing ENE, 30/30; air, 26.8 C; ground, 26 C. Now sunny but the treefall is mostly in the shade. at 1430 hr it is still 30/30. at 1500 hr the snake is 30/30; air, 26 C; ground, 26 C.

8 July at 1015 hr the Ch 4 B. asper is on the tree trunk behind the bromeliad, fully exposed, w/ head up on an outer loop and facing

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8 July (continued) SE; 29/30; air, 26C; ground, 24.8C. Sky is bright overcast, hot and humid. at 1035hr snake is same, 29/30; ground, 25C; air, 25.2C. Took several tightly framed photos using Michael Fozden's tripod. The snake's tail trails out of the coil and up into the leaves of the big bromeliad, as if it had crawled through there. This site is on the NE side of a gap at ≈760 CCL and never receives a lot of direct sun. The part of the gap (SW) across the CCL is sometimes in large patches of direct sun light, no more than 8 m from this snake. at 1100hr snake is same, 29/30; air, 26C; ground, 25.2C. at 1130hr it is still bright and overcast, snake 30/30; ground, 25.5C; air, 26C. at 1155hr, snake 30/30; ground, 25.8 C; air, 26C. at 1410hr I checked the ♂ Lachesis muta at ≈CES320 (ch3); it is still in the hole, 25/30. at 1445hr I found L. muta ch1 in the same place on CCC, 25/30; ground, 25C; air, 25.8; overcast. at 1515hr B. asper ch4 is not visible but the signal is strongest from the brush pile in the vicinity of the bromeliad, 30/30; ground, 25.6C; air, 27.8C; blue sky, partly cloudy. Did it go down because of heat or because of army ants, which are now trekking right through where the snake was this morning?

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8 July (continued) at 1600hr, w/ the Fogdens, I found B. asper Ch 2 in same place, 25/30; air, 26C; ground, 25.2C. Bright sky, partly cloudy.

9 July at 0745hr I can't see B. asper Ch 2, but the signal is still strong from the same place; 25/30; air, 24C; ground, 24C. Clear and sunny. at ≈0815hr photographed Norops limifrons and caught pretty N. lemurinus ♀ ≈1 m up on leaf. Very nimbly jumped to adjacent tree. at 0830hr, snake, 25/30; air, 24.5C; ground, 24.2C. at ≈0845hr walked completed around that part of the gap (no fun, scary) and signal seems strongest by bromeliad, under brush. Couldn't see snake. Still hot and sunny. at 0900hr snake is 25/30; air, 25C; ground, 25C; bright, partly cloudy. Thinking about art and landscape: surrealistic forest and Garcia Marquez versus the epistemical desert and Camus. at 0930 hr it is still bright and partly cloudy, 26/30; air, 26C; ground 25C. at 0955hr I spotted the snake stretched out and emerging from brush on the E side and ≈3 m from the bromeliad. Took photos. Snake was in full sun, sky overcast. Head points W from a hairpin ≈10 inches back, and rest of the visible (≈ ½) part of snake is pointing E. 26/30; air, 26C; ground, 25C. at 1015hr, snake

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9 July (continued) same, 28/30; air, 26C. It has been in the shade almost all the time, but there is still sun nearby. at 1035 hr, snake 28/30; air, 26C; ground, 26C. at 1051 hr, head has now turned SE and is out in space off a large leaf. I saw clusters of tongue flicks despite the fact I was well hidden behind a palm - exploratory? at 1100 hr snake same, 29/30; air, 26.1C; ground, 25.2C. I went to the water fall before lunch, and to town for mail afterwards.

10 July at ≈0730 hr an OTS student found an adult Clelia clelia crossing the AC lab sidewalk in forest. It thrashed when handled. At ≈0800 hr I was taken to ≈100 m on CES, where Edwin was watching an adult Pseustes poecilonotus that was frozen on the ground with its tail & posterior up on a buttress. Back and tail had many small, consecutive kinks, and my impression ~~the~~ was that the animal was just then descending from the tree. It thrashed, inflated, and bit repeatedly when grasped. Not feeling well and slept much of the morning. Just after lunch, David Clark showed me a very large Leptophis ahaetulla crawling ≈2.5-3 m above ground on vines and saplings, just off the AC lab sidewalk and in The Reserve. Snake was too high

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10 July (continued) to grab for, and we watched it move away and up out of sight for a few minutes. As w/ the Spilotes on the bank of the Rio Puerto Viejo, I was really impressed by the ease of movement of the snake on slender vines and over leaves — as easy as swimming or flying, or so it seemed. Gerardo Vega, a very skilled worker and local naturalist, told me he watched a Leptophis ahaetulla this morning chase a Smilisca (puma?) and catch it. The snake was initially ≈1m up on a bush, and the frog hopped twice before it was caught. He estimated the snake as ≥1.2 m and the frog as a few centimeters.

11 July When I handled the Clelia this AM for photos, it repeatedly tried to crawl away. When I restrained the head or anterior body, it immediately elevated the tail, exposing the white belly and prolapsed cloaca, then "seized" my wrist in tight coils w/ the tail! This 6 ft + snake never tries to bite. I seem to be getting a flu or cold that's been going around here for weeks and stayed indoors all day. Manuel and Anna Peralta found a Scaphiodontophis venustissimus active in litter, which dashed beneath a

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11 July (continued) Socratea palm when chased. Resemblance to a Micrurus nigrocinctus was sufficient to cause Manuel to pin the snake w/ his boot. I palped a 3.85g ♂ Spherosomophis cheniei, swallowed head first, out of the 43.5g ♂ Scaphiodontophis. By early afternoon the snake had died, tho why we don't know. Deborah Tetourneau and Feynner Godinas, friends from Berkeley, arrived.

12 July hot and sunny all day - we need rain. The forest is thirsty! At 0730 hr Lachesis muta ch 1 was in same place, head down; 23/30; air, 23C; ground, 24C. at 0804 hr Bothrops asper ch 4 was down behind the log, not in sun; 23/30; air 24C; ground, 24C. at 0843 hr, B. asper ch 2 was still in hole w/ eyes very opaque; 23/30; air, 25.5C; ground, 24.8C.

13 July at 0905 hr B. asper ch 4 is immobile, partly coiled E of the bromiliad on the log, w/ its posterior trailing through the green bromeliad leaves. Head faces ENE; 25/30. Discovered I broke the thermometer. a bright sunny morning! Took photos at 0910 hr, only tail still up in bromiliad. at 0930 hr the snake is same, but tail has come down into coil; 29/30. at 0947 hr, as I watched, the snake shifted a different, more posterior part of its body into direct sunlight, and stopped w/ its head facing SE. at 1000 hr the snake is in same position, now mostly in shade; 32/30.

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13 July (continued) at 1030hr the snake is in full shade and has been almost continuously since 1000hr; sky sunny, partly cloudy; 32/30. at 1100hr everything is the same, although there are gusts of wind and it seems that clouds are building up from the ENE; 32/30. at ≈1115 hr Cathy Prosper (Oregon St. U.) and Anne Brooke (UCB) saw a coral snake ~~pa~~ patterned snake in forest just behind the kitchen on SOR. It was fairly stout and they thought it probably Lampropeltis triangulum. at 1126hr I grabbed a Leptophis nebulosus at ≈SOR50 as it crawled on grass across trail. It had SV 515 mm, tail 257 mm, head width 6.7 mm, and 17g. I palped a juvenile frog, cf. Hyla, from it that had been swallowed ~~tail~~ tail first, SV 17.5mm, head width 6.7 mm, 0.4 g. When I initially grabbed the snake it thrashed, gaped, bit, and defecated a foul substance. Forgot to mention that yesterday at ≈1600 hr Feynney Godinas showed me a Bothrops nasutus (1360 + 38 mm feces saved) in a tight coil in the open at ≈200m on CCL. at 2100hr Manuel and I found Hadesis muta Ch 1 at a new site, N of the CCC trail and under some fallen leaves that formed a thatch over a limb. She seemed alert; 25/30. at 2119 hr B. aspera Ch 4 was behind the bromeliad and facing E; 26/30. a very bright moon tonight,

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13 July (continued) such that we can see the tops of understory shrubs w/out lights. The descent down the steep hill on CCC was especially beautiful, w/ the outlines of limbs and foliage clear cut on either side. Saw one large armadillo (Dasypus?) and ≥2 Potos.

14 July Raining steadily since during the night. At 0830hr Lachesis muta Ch 1 is in the same place, head facing SW and down in coils; 23/30. At 0852hr Bothrops asper Ch 4 is in same place as last night; and is drinking from droplets on its skin. At 0900hr the snake is still drinking, as I could clearly see movements of the lower jaw. Entire 8-10 minutes I watched snake, its head was elevated, nose almost vertically downward. Chin movements sporadic. 23/30. At 0922hr, B. asper Ch 2 is still in the hole above the Rio Puerto Viejo; 23/30. Light rain still falling. At ≈1400hr I was called to ≈CCL 175m to capture a large Bothrops asper, which turned out to be the same one we caught 17 June 1984 and lost track of (because it moved and left behind a defecated radio) on the night of 1 July 1984. It's Ch was 5 then and now. The snake was found today by Deborah Tetoarneau (UC Santa Cruz) and Feynner Godinas and three others. They were standing on the boardwalk

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14 July (continued) watching a bird on the buttress of a fallen tree just N of the trail when the snake crawled out and away from them. This is a place where there is a pit under and on the N side of the boardwalk because of the uprooted tree. Snake coiled immobile facing them beside the buttress. When I tried to hook it into a cam it crawled away repeatedly, then stood its ground under dead leaves at the base of a small tree, w/ head & neck in S-coil and tail vibrating. Once I had to restrain it a few inches behind the head and it turned and gaped widely w/ fangs erect for ≈ 1-2 seconds - the mouth looks huge and white, jaws open almost 180°! After dark Manuel and I made a circuit to check snakes on the Loop Trails. At 2225hr we found the Lachesis muta Ch 1 alert in the same place; 23/30. At 2240hr we found the gravid ♀ Bothrops asper Ch 4 in exactly the same position as last night, behind the bromeliad in a hairpin coil w/ head facing E; 25/30. Saw a large Dasypus just before we emerged from the forest on SOR behind the station. Michael Fogden had caught an adult Dendrobates ~~th~~ cenchroa lying out on a palm leaf that contained a half-digested Norops lemurinus that had been swallowed head

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14 July (continued) first. Snake weighed 22.5 g; SVL 715 mm; tail, 315 mm; ♀. Remains of the anole (tail, hind legs, post. of body) weighed ≈ 5 g; groin to heel, ≈30 mm.

15 July At 0930 h found the Hoheisis muta on CCC in the same place, head down in coils; bright overcast; 22/30. At 0945 h Bothrops asper Ch 4 is out in a wide, open coil E of the bromeliad. Sunny, snake is partly in sun; 24/30. It seems to me that this snake usually has a tight, sheltered coil at night and a broad, exposed coil in the daytime, although a few nights ago Michael Fogden saw her in the open at ≈0300 h. At 0950 h I took some photos and saw her "swat" at a fly by flinching skin and or muscles of the body a few centimeters anterior to the arms. Snake is still obviously gravid but the swelling is not yet concentrated near the cloaca. At 1000 h snake is same but all in shade; 26/30. At 1030 h all is same; 26/30. At 1047 h, the B. asper Ch 2 in the hole of bark above the Rio Puerto Viejo is as before; 23/30. At 1415 h we released the old B. asper Ch 5 at the capture site which is w/in ≈100 m of her former sitings. Put the radio in her w/out difficulty, and noted two injuries: a superficial skin cut behind the head which I undoubtedly

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15 July (continued) caused yesterday, and two kinks a few inches above the cloaca which appear to be spinal injuries of unknown origin. When I turned her out of the can, she glided rapidly away to leaves at the base of a small Welfia palm a few meters N of the trail, then coiled under them w/ S-coil and head facing me. I have the growing impression that these snakes try to escape, then prepare for an offensive defense should the pursuer continue. at 1425h Bothrops asper Ch 4 has head on the E side of a broad coil, facing E; bright overcast; 29/30. at 1440h. B. asper Ch 5 is as before, still "aimed" towards the trail.

16 July An uncomfortable night w/ biting bugs and sniffles, and I felt crummy this AM so Manuel checked the snakes. Getting a sore throat so I napped and reloped all morning. At ≈ 1330h Feynner Godinas showed me what appears to be the den of a Felis onca. It is ≈50 m N of the CCL at ≈ 300 m, on a ≈N facing slope above the Quebrada El Salto. The slope is sparsely covered by trees and small understory palms, and there is a large fallen tree nearby. The entrance is a few meters down slope from the ridge, marked by an obvious mound of red dirt that rises directly in front and then falls away down the slope. The hole

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16 July (continued) faces slightly up from horizontal, measures ≈ 50 X 21.5 cm, and is shaped like this:  . W/a light we could see that the den is a large, more or less round chamber o 2 m in all dimensions, w/ the roof slightly higher than the entrance hole. It is clean — no feces, bones, etc, and only a leaf or two; no obvious bed. There was a distinct tho faded cat track a few cm in front of the entrance on the upslope between entrance and dirt mound, w/ well spread toes and ≈ 12 cm across. Couldn't find any hair or other sign, but a distinct game trail traversed the slope from below to the west, just above the entrance, to the ridge to the east. We tried to imagine any other animal at La Selva constructing that room and couldn't, and the entrance seems large enough for an adult jaguar (or a person) to slip into. It seemed recently used, as there were no spider webs and the edges of the entrance were very distinct. The room drops off just inside the entrance, such that one couldn't just crawl in or out. Maybe a nursery? We (Faynner and the Fogdens) agreed to keep the location secret for a few days and not revisit the site immediately, in case the cat is

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16 July (continued) using it. At 1405 hr Feynner showed me a small (≈40 mm) Eleutherodactylus bipercatus that he found inside a dry, old fruit on the ground. He found it this morning amidst a column of army ants, undisturbed by them. George Schaty (U. Wisconsin) came by as we talked and identified the fruit as Passiflora ambigua. At 1410 hr I saw the Bothrops asper Ch 5 in a loose coil on the forest floor near where it was released, w/ it's tail & posterior trailing outside the coil proper (because of injury?); neck looked OK; 29/30. At 1435 hr B. asper Ch 4 is on a branch pile ≈2 m NE of its "usual" site closer to the bromeliad. It is in shade in a fairly tight coil; bright sun and partly cloudy; 30/30. ~~At~~ ≈1655 Jonie McTargue (U. Miami) called me to a Hamipropellis triangulum she saw cross the CES at ≈50 m and take refuge in dead leaves at the base of a small tree. When I seized it the snake thrashed, bit fiercely and repeatedly, and cloacal discharged. It had obviously eaten recently, and I palped three Heteromys from it, all of which had been swallowed head first. The snake weighed 360 g; SV, ≈ 102.8 cm, tail, 17 cm; ♂. The mice weighed 40, 30.5, and ≥ 29 g. Went to Puerto Viejo w/ Rodolfo and Anna Peralta

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16 July (cont.) for the night.

17 July Raining before dawn and as we walked into town. Victor's truck wouldn't run, so all of us (≈10) rode in Angel's big boat from behind Victor's house to La Selva, in a good rain. Saw several kingfishers and a heron. Still have a sore throat.

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3 August Black Mesa, Cimarron Co., Oklahoma
Arrived here ≈ 1800 and walked around flats and lower slopes for 1-1½ hours. Still very light. Saw juvenile *Holbrookia maculata* in flat, open grass beside the road, which responded to approach w/ fast, straight dashes for ≥0.5 m. Saw a *Sceloporus undulatus* which escaped in boulders, and an adult ♂ *Crotaphytus collaris*. I found the collared lizard inactive under a lava rock in a flat grassy place strewn w/ them; it ran a few meters away and under a flat rock, where it took refuge in a burrow. The soil was too dry to dig much w/ either hands or pocket knife (broke a point). Camped at Black Mesa State Park, ≈8-10 rd. miles away.

4 August Back to Black Mesa ≈0700 and walked around 'til >1200. Thus today a team from the MVZ scaled the highest point in Oklahoma in a morning, at 4973 ft. The Mesa is a rimrock, several miles long, that seems to run WSW to ENE. We walked up the ≈S facing aspect. The top is a plateau bordered on the ≈N by a meandering canyon, surrounded by rimrock. As one leaves the grassy flats the slopes have juniper, cholla and prickly pear and small basal cacti, and shrubs. The rocks are generally light, but the rimrock is dark reddish brown lava and there are cascades of the latter that reach and spread out down the slopes at intervals.

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4 August (continued) The only lizard we caught was an adult ♀ *Sceloporus undulatus* on a boulder; she seemed to match well enough the background colors, but might not be any darker than normal individuals from elsewhere.

Las Vegas, San Miguel Co., New Mexico

Stopped here to camp just outside of town at Storie Lake State Park. Very good meal at Johnny's Mexican restaurant, then to a movie (Conran The Destroyer). We had been told park gates closed at 2200 and raced back w/ only a minute or two to spare, only to find them locked. Just as we'd laid a board over the one-way exit gate spikes to drive over them, the park official came up, very disgusted, and let us in. Then found that a large family group had either ignored our tent or overlooked it! On the drive to here we've seen numerous raptors thus far, including prairie falcons, ferruginous and red-tailed hawks, and at least one eagle (on a telephone post). Also a *Vulpes vulpes* out in the middle of grassland in Oklahoma (DOR).

5 August "Point of Malpais," ≈20 mi S. of Grants on Hwy 117, Cibola Co., New Mexico

We reached here in midafternoon, a site Claudia read about in a paper by Hooper on melanism in mammals on lava fields. This is an

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5 August (continued)

extensive, heavily vegetated lava field covering hundreds of square miles. It is bordered on the E and W by higher forested mesas that aren't lava, and on the S by grassy plains. Much of the lava on the flow is covered w/ lichens, and there are many junipers as well as ferns in the deeper cracks. In places there are long, straight sided, deep fissures a meter or more wide and several meters deep. The only lizard we saw was a ♀ Sceloporus undulatus on the flow. She seemed a little darker than I expected, w/ broken dorsolateral stripes that are near the local lichen colors. Claudia photograped her on lava, on a non-lava rock across the road, and on a dead branch – she was only arguably more cryptically colored on the lava

El Morro National Monument, Cibola Co., New Mexico

Arrived here ≈1830 to camp, a very pretty spot at over 7000 ft. Pinyon, juniper, sage, lots of flowers, on grassy flats and low hills, surrounded by large sandstone, tree covered mesas. Just as we walked up to the Park Ranger's campfire talk at 2030h it started to pour (he seemed surprised when we left for shelter) and rained all night. When I awoke ≈0600 it had stopped, but now, ≈1½ later, its still moist and chilly and mist shrouds the mesas (early on the 6th).

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6 August

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27 October

≈2-3 mi W. of Lake Elsinore on Hwy 74, Orange Co., California
After a beautiful drive through the Santa Ana Mountains, I stopped at this roadside spot where in the spring of 1979 I caught a juvenile Crotalus ruber. Today turned pieces of tin and boards, but got only Uta and Sceloporus occidentalis (this was ≈10 am).
Pisgah Crater, San Bernardino Co., California
Walked around here from 1400-1600 hrs. Sunny, a little cool, rocks warm to touch. Saw ≈6-8 Uta, caught one. Also got a small adult ♂ Urosaurus graciosus under a rock, ≈1.5 m from a creosote bush. Saw tail drags, cf. Cnemidophorus, and lots of mammal tracks, but no snakes or snake tracks. Got circled by a CHP plane and then an officer in a car — said they're watching for stolen vehicles. Supper in Ludlow. Road hunted from ≈1815-2030, ≈80 miles. Got adult Crotalus cerastes at 1827 and 1900 hr, both very noisy, and an adult ♀ Coleonyx between the two. I drove back and forth from the RR tracks to a point ≈10.7 miles west of them, thereby covering both places where lava crosses National Trails Hwy and hoping to get a Trimorphodon!

28 October

Hwy I-40 at Newberry Springs, San Bernardino Co., California
DOR Masticophis flagellum at ≈0830 hr, apparently hit yesterday. Total length ≈40-50 cm, so I surmise it was a yearling.